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MULTIMODALITIES AND DRAMATIC IMAGINATIONS IN MISE-EN-SCÈNE COMMUNICATION

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by

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Dissertation

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

The University of Texas at Austin

August 2007

Dedication

To My Parents

Acknowledgements

I wish to thank Madeline Maxwell, who has been my primary advisor and mentor throughout my doctorate. I am grateful to her for her feedback and insightful suggestions to improve. I also wish to thank the other members of my committee for their time, insight, and suggestions. In particular, I thank Leslie Jarmon for encouraging me to think expansively and to theorize about embodied interaction. I express deep gratitude to Jen. This dissertation cannot be completed without his support and encouragement. I am very grateful to Joyce Wei. I also thank Susan Corbin for her help. I want to thank Tomoko Ikeda, who was a superb cohort-mate. I express my gratitude for all the participating artists.

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Publication No._____

Shin-Jung Ho, Ph.D.

The University of Texas at Austin, 2007

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This dissertation is a micro-analysis of one particular type of communicative practice, the "mise-en-scène communication," which emerges as people talk and build scenery in their everyday work experiences in a theater consulting company in Taiwan. This dissertation engages in interaction analyses of participants' naturally occurring talk and face-to-face interaction in the set design meetings. Three findings are documented. First, mise-en-scène communication is multimodal. The participants use visual representations to communicate. These visual representational tools include architectural drawings, scale models, miniature props, and 3-D models and animations. The use of visual representations and communicative resources of language, gestural and postural conduct, the material surround, and physical objects enable the participants to visually communicate, envision, and construct scenes in and through talk and interaction. Second, mise-en-scène communication concerns three key organizing, work practices of creating an entirety of the theatrical space, including the scene-setting practice, the staging practice, and the measuring practice. This study finds that in these three major mise-en-scène practices identified, the theater artists express and formulate scenes and dramatic

ideas in their talk. At the same time, they also frequently turn to bodily conduct as a source of insight into configuring, expressing, and formulating dramatic scenes. Third, the architectural drawings, the scale models, the props in miniature, and the computer simulations of theater space provide a material, perceptual field, which shapes embodied interaction systematically performed within it. The architectural drawings enable the participants to project the perceivable space through language and bodily behaviors. The miniature model and objects in a set create a full stage of symbolic communication in which scenes are arranged and dramas are spoken and created. Moreover, the theater artists manage to use language, gestures, and semiotic resources of the computer program, Maya, and its design interface to communicate and build 3-D scenes together. This research concludes that the plurality of channels exists in human communication. The micro-analysis of mise-en-scène communication reveals such a communicative process in which the participants draw on multiple modalities to visually construct theatrical meaning out of the set of visualization objects.

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Chapter 1

INTRODUCTION AND THEORETICAL FRAMEWORK

A few years ago I was allowed to participate and observe a design and preparatory meeting for a theatrical production in a design studio in Taiwan. The production had been staged by a leading Taiwanese avant-garde director, also a co-founder of the SBL1 theater design and consulting company. In that design meeting, I observed how the participating artists created imaginatively conceived stage space in their talk, with the aid of architectural drawings and blueprints. In that design meeting, I saw imaginative stagings of props and actors through talk and hand gestures and invisible artistic achievements already forged in that preparatory meeting. I become less interested in the evolution of the overall theater project. From the usual archival materials—one videotape, a smattering of interviews and reviews, some scene sketches, a promptbook found in the design studio, and a few scattered memories and notes survived to retrace the creative process, I become fascinated with the communicative process of talking and configuring the set space. The communicative process of mise-en-scène communication incorporates a wide range of gestural activities and graphical participation, which give a play immediacy. The talk and the gestures shape and cause the overall dramatic vision for that play. The embodied work of these artists merits documentation whether the final production is gorgeous or awful because of the budgetary constraints.

The set design meeting offers an opportunity for me to observe the communicative situation and to discover ways in which the artists visualize scenes in their natural interaction. To fully understand how scenes are visualized involves not only an examination of linguistic practices, but also an integrated approach where multiple,

[1] For the purpose of confidentiality, the name of the company has been altered, and the names of the theater artists who participated in the study have been changed.

communicative modes such as speech, hand gesture, gaze, and graphical feedback are simultaneously used.

Introduction

This is a study of one particular type of communicative practice, mise-en-scène communication, which emerges as people talk and imagine visual scenes. Everyday communicative interaction consists of a complex mixture of speech, body movements, facial expressions, and the use of tools or objects. As Sharma, Huang, and Pavlovic (1996) note, the most natural means of human communication is multimodal. This study observes that scene design is discursively, visually, and materially characterized in people's talk and interaction in set design meetings. In everyday life, when telling a story or telling a joke, people describe, create, or transform scenes. To construct scenes in talk, verbal language is not the only communication mode. Interlocutors often "visualize" scenes. For example, they often sketch out scenes on their hands with their fingertips. Their hands also intertwine paths, weave places together, and give shape to narrated spaces. De Certeau (1988) depicts that everyday spatial practice or spatial story is like walking on the street. A pedestrian's story always begins on ground level, with footsteps. In everyday life, the spatial story has a qualitative character and it is "a style of tactile apprehension and kinesthetic appropriation" (p. 97).

In the professional theater, set designers create settings that are appropriate to the play; in the professional theater, the set design can be realistic, abstract, or fanciful. Scene designers sculpt space in their minds and like architects, engineers, builders, decorators, military planners and others who work with what things look like, they must be able to communicate their ideas to others. Set designers communicate their ideas to directors through architectural drawings, scale models, or computer simulations that indicate how scene elements are built and how the set will look in the theater. Analyses of

communicative instances in design meetings illustrate that people use visual representations and visibly accessible resources such as material objects and the material surround, as well as gestural and postural conduct in the creation and communication of scene designs. It is suggested that an interplay of these multiple modalities (e.g., Bolden, 2003; Goodwin, 2000, 2003; Jarmon, 1996, LeBaron; 2004; LeBaron & Jones, 2002; MacMartin & LeBaron, 2006, McIlvenny, 1995) enables our understanding of the multimodal nature of everyday talk and interaction. This study draws on communication in a visual art, theater. On a macro level, this dissertation examines domains of cultural meaning in the sense that dramatic imaginations may be constituted and reconstituted in the scene-setting process in which artists work together and use architectural drawings, scale models, and computer animations to communicate.

In specific, drawing on the model of situated communicative practice (Goodwin, 2000; 2003), this dissertation studies the discursive and embodied construction of one type of professional discourse, the mise-en-scène communication in which set designers, directors, and other theater artists communicate the scene design for a theater production. The Oxford English Dictionary defines “mise-en-scène” as an arrangement of “the staging of a play,” “the scenery and properties of a stage production” or “the stage setting.” My analyses will focus on communication and collaborative work practices in several design meetings in Taiwan in which the theater artists communicate the staging of a play and arrange the stage setting. The analyses will focus on how theater professionals work with various visual representations and how they draw on both language and bodily conduct to concretely build scenes or to visually communicate their dramatic imaginations of the stage settings and theatrical phenomena that do not yet exist. This study presents artists’ communication involving three types of visual representations employed as part of working plans and standard procedures of theatrical production

(Brockett, 2000)—architectural drawings, which show scene design in two dimensions, scale-models, which show a three-dimensional, proportioned replica of what will be seen on the stage, and computer simulations of virtual theater landscape and scene.

The approach taken here is micro-analytical. The study finds and examines the details of naturally occurring, “mise-en-scène” communication in theater artists’ everyday work experiences. The method will be specified in detail in the next chapter. This study involves both the use of ethnographic observation and the video recording of natural talk and embodied action that serve as a basis for analytical claims. When observing the design meetings, I asked the following research questions:

1. How do people talk and interact in design work, given the physical complexity of “scenes” (e.g., a computer simulation of the stage space or the concrete box set) that might co-exist in the imaginary or realistic talk about scenery along with the various techniques and visual representations to aid such descriptions and communication of theater’s visual worlds?

2. How is “scenery,” “set space ”or“ stage arrangement” sculpted in people’s naturally occurring talk and interaction? How are multiple modalities (e.g., bodily orientation, gestural conduct or the material surround) coordinated and deployed in the accomplishment of such a specific task?

3. What is mise-en-scène communication as a genre or speech act? What are the characteristics of mise-en-scène communication?

4. How does the type of visual representation in which the set design is portrayed or visualized affect people’s use of embodied action? How and in what ways may the type of visual representation enhance or inhibit embodied action? How do the overall arrangement of representational tools and features of these representational tools used by

participants working collaboratively affect people's visual compositions and their dramatic imaginations of what will be seen onstage?

5. Do language and discourse also constitute a form of autonomous mise-en-scène and what practices in mise-en-scène communication are linguistically and materially conditioned? In specific, what are the practices in which scenery, properties, and performers are invoked, thereby suggesting any specific interpretation of the play that contributes to the total production of the theater and its spectacle?

The chapters that follow are organized around the three main visual representations and techniques that not only enable the envisioning and formulation of scenery, but also direct the mise-en-scène work: (1) the scenography and architectural drawings; (2) the scale model and small props; (3) the computer animation and simulations. From the micro-analysis, three major findings of multimodalities in mise-en-scène communication emerge:

First, mise-en-scène communication is multimodal. Participants use bodily conduct (e.g., gaze, gesture, posture, and physical movement in space), distinct and heterogeneous objects inside or on a haptic space (e.g., a ruler on the architectural drawing or a miniature chair in the scale model) and material surround on a presemiotic level of unmediated physicality (e.g., a grid in the virtual, 3-D model on the computer screen) as a resource for conducting their interaction and design tasks. All these perceptual media not only commingle with the physical embodiment and simultaneity of scenery, but also provide a source of meaning—of how people talk, build or envision scenery in mise-en-scène activities. The findings also show that despite the way in which crucial aspects of multimodalities in structuring how people talk and configure scenes remains constant in different design meetings and with different visual representations, multimodalities are

not self-contained units that can be analyzed in isolation from the processes of talk, interaction, and work practices through which they are made relevant and meaningful.

Second, mise-en-scène communication concerns three key organizing, work practices of creating an entirety of the theatrical space: (1) the scene-setting practice in which scene elements or props are invented, assembled, or simulated; (2) the staging practice in which imaginary or embodied actors are placed and rehearsed; (3) the measuring practice in which the dimensions of scene units and pieces are sized and scaled. Each practice deals with unique, dramaturgic concerns and the differences in architecture between the stage as set space, the stage as acting space, and the stage as localized in a set of technical specifications. This study also finds that in the three major mise-en-scène practices identified, the participants frequently turn to bodily conduct as a source of insight into formulating specific mise-en-scène objects and problems. The bodies perform the props, supplement the perceptions and dimensioning of the props, and create figuration moments wherein an actor's physical contact with props and such performing space can be envisioned. All these practices show that participants manage to find aspects of creativity in solving particular mise-en-scène problems in the work environment and such solutions are tied with how people frame and formulate these problems through sensory modalities.

Third, each visual representation, although in its perfect stasis, forms a specific material medium which has the form-giving potential of human embodiment. Sociological studies have sought accounts of how visual representations are constructed as cultural artifacts and abstractions of information (e.g., Chaplin, 2005). The materiality of representational devices (e.g., the flat surface of architectural drawings, the three-dimensionalities of the scale model, and the design interface of the computer) implies how the human body elaborates as well as is framed through interactions facilitated by

visual representations. Architectural drawings must be embodied. Scale models invite hands-on manipulation of small objects. The computer design program, Maya, and its design interface, assume material agency wherein pointing gestures are participants' primary means of participation in a digital environment. Moreover, producing and overlapping systems of discourse and material practices, visual representations, as Susan Stewart (1996) writes when describing the interiority of a miniature model, "become a stage on which we project, by means of association or intertextuality, a deliberately framed series of actions" (p. 54). It is in this sense that dramatic imaginations are constructed, materialized, and embedded in both discourse and visual representations.

The approach of this dissertation stresses the various sensory channels for human communication and how both verbal and nonverbal behaviors inform a large proportion of, in this research, the artists' work undertaken "on the deepest level of interpersonal and environmental communication by the co-structuration of the participants' activities" (Poyatos, 2002, p. 32). The traditional model of human communication is based on, in the ideal, the transmission from a speaker to a recipient of verbal messages. However, the discussion of human communication must consider the process in which communicators visually and acoustically carry all messages in a given situation. Also, in human communication, very often, the verbal description of something seems to be an integral part of the thing itself.

In a psycholinguistic experiment conducted by Glucksberg, Krauss and Weisberg (1966), nursery school children play the game of "stack-the-blocks." A communication problem is that the speaker and the listener have identical sets of blocks, but only the speaker knows which order they should be stacked in. The speaker must tell the listener which blocks to stack so that their two stacks are identical. Their research shows that children can play the game quite well when the familiar pictures are used. However,

when the blocks have pictures that do not have standard familiar names, the children perform poorly (see also Glucksberg & Danks, 1975). A problem like the stack-the-blocks also exists in scene design situations wherein the referential meaning of a word, a lexical item, a phrase, or a sentence is the particular thing that artists can communicate with and through a full set of graphs. The language available is probably not sufficiently precise to convey these messages alone; at any rate, it would be unnatural to try. Observations of artists' communication demonstrate that communicators engage in distinct patterns of interaction involving pictures and visual systems—the presymbolic storage of experiences and meanings.

Second, things and the material channel form a consistent pattern in human interactions, whether the communication is being done verbally or nonverbally. In Nelson's (1973) study children consistently talk about some things and never about other things, despite what their mothers talked about. Nelson shows that the clothing words that children tend to use refer to items that they could easily manipulate, like shoes and socks. Nelson (1973) characterizes early referential behaviors in children's communication:

> They do not learn the names of things in the house or outside that are simply "there" whether these are tables, plates, towels, grass, or stored. With very few exceptions all the words listed are terms applying to manipulate or movable objects.
>
> The most common attribute of all the most frequent early referents is that they have salient properties of change—that is, they do things (roll, run, bark, meow, go r-r-r and drive away)….The omissions are in general, of things that—however obvious and important—just sit there: sofas, tables, chests,…trees, grass. The words that are learned [uttered] are not only the ones that the child acts upon in some way (shoes, bottle, ball) but also ones that do something themselves. (pp. 31-33)

Children utter and learn about the world, not through passive observation, but by interacting directly with the material object they can reach and manipulate (see also Nelson, 1974). Things always influence our communicative act. In design situations, to communicate is to act. For example, ideas are communicated through small props that can be grasped, handled, manipulated, and placed inside the room in miniature (i.e., the scale model of the theater stage). Such communication pattern is not a culture-specific behavior. For both adults and children, the communication process depends not only on the particular language, but even more on the way that language can be used in a concrete scene the speaker acts and dwells on.

Knapp (1978) shows that artifacts and environmental objects assist our bodily expressions and communication. Osgood also argues that things constitute perceptual channel in human communication. Osgood (1980) writes “an abstract performance grammar:"

> Both in the evolution of the species and in the development of individual humans, the cognitive structures which interpret sentences received and initiate sentences produced are established in prelinguistic experience, via the acquisition of adaptive behaviors to entities perceived in diverse action and stative relations. (p. 229)

Osgood characterizes how human communication integrates and uses information across linguistic and perceptual modalities:

> …dependence of linguistic cognizing on prior cognizing in the perceptual channel at all levels, and for intimate interactions between these channels in both ordinary communication and diverse experimental situations as well for parallel processing in both channels in both ordinary communicative competences and extraordinary psycholinguistic experiments…leads back to the assumptions I made near the

> beginning of this paper…that it [communication] is shared by both nonlinguistic (perceptual) and linguistic information-processing channels. (p. 258)

People communicate linguistically and perceptually. Communication is not just a mere building-up of linguistic descriptions as mental representations. In all forms of social communication and for both adults and children, people show objects to others, point to objects or people, and track the pointing and eye gaze of others. Given these simple observations and looking at everyday talk and communication, I note that mise-en-scène communication demonstrates one such essential form of communication. The social interaction in the design meetings I observed also reveals both important and complex form of human communication, which puts in motion the various transmitting, communicative channels due to the complexity of linguistic, physical, or circumstantial factors. The mise-en-scène communication is essential for the study of communicative processes and systems, not only for a deeper knowledge of dramatic talk but for people's linguistic and physical activities, and all communicating in interactive situations molded by the things that differ in greater or lesser degree from other communicative contexts.

The goal of this dissertation is to shed light into the general human communication process. More specifically, this dissertation demonstrates how people participate in collectively imagined situations. Communicating in design activities is based on the premises that an imagined stage of theater exists and visual representations of such stage space enable one to communicate a particular expression better. If we are to understand mise-en-scène communication as a form of human interaction, we need to look how these premises are realized and how the collective imagination is built and particular forms of participation are maintained through the use of talk, embodied activity, and visual representations in moment-to-moment interaction. By researching how artists talk and communicate imagined spaces and scenes, this research attempts to address a basic issue

in the study of human communication—“how human interaction brings multiple dimensions of ordered involvements simultaneously” (Condon, 1980, p. 50).

Another purpose of this dissertation centers around the analysis of verbal and nonverbal behaviors and the synthesis of mise-en-scène practices. This research helps communication scholars begin to care about issues posed from within imaginary communication and imagined premises, which could influence or elaborate people’s use of verbal and nonverbal modalities. While the graphs, the props, and the models in miniature provide diverse ways of understanding and engaging with design and dramatic activities, the communication problems and issues such as those existing in the game of "stack-the-blocks" emerge particularly sharply in the microanalysis of human behavior and interaction and such problems and issues extend to many other domains. For example, Jurow (2005) shows how “figured worlds” are mediated through language, tools, and interactions in the classroom and shows how students navigate through and develop understandings of non-existing spatial phenomena through graphs as capable communicators (see also Boaler & Greeno, 2000). Similarly, by analyzing how people’s dramatic imaginations are communicated and expressed, we include all of the complex dimensions and interconnections between language, nonverbal conduct, and things. This research also demonstrates the organization of communication behaviors paralleling those semiotic systems (i.e., the graphs and the things in miniature) over which interactants develop speech repertoires, elaborate with bodily movements, and accomplish design tasks. Such a focus also helps communication scholars better understand an interpretation of a work scene in a small “community of practice” (Wenger, 1998) in relation to nonverbal means of communication.

The section that follows discusses the theoretical framework guiding this research.

Theoretical Framework

Conversation Analysis

Conversation of verbal and other gestures is an almost constant activity of human beings. Sacks (1984) points out that "detailed study of small phenomena may give enormous understanding of the way human do things and the kinds of objects that use to construct and order their affairs" (p. 24). The study is situated in a framework which uses micro-analysis and focuses on people's talk and interaction in a moment-by-moment fashion in the workplace setting. Researchers interested in goal-oriented talk in work settings from a great number of domains—including discourse analysis, conversation analysis (hereafter referred to as CA), and others—engage in the study of language use as their central phenomenon (e.g., Agar, 1985; Drew, 1992; Maynard, 1992; Mehan, 1990; Philips, 1990; Tannen, 1987). In recent years, a number of studies began to focus explicitly on the little-explored relations among discourse, work context, and gesture (Beach, 2002; Bolden, 2003; Frankel, 1983; Heath, 1997; Heath, 1991; Heath, 1986; Hindmarsh, 2002; Modaff, 2003; Robinson, 1998; Streeck, 2002). For instance, adopting performatory and CA approaches, Jarmon (1996a) shows that researchers in a major university constantly enact bodily performance and embodied actions to enhance their points and analytical abilities in routine data sessions, thereby producing bodily practices essential to accomplishing the institutional goal and task of conducting social science research.

Much of what individuals do at work can involve not only verbal and nonverbal processes but also representational practices (e.g., graphical drawings and models). A work environment often consists of a set of artifacts and representational tools that participants use to think and talk. Garfinkel (1967) first writes that "there exists a locally

produced order of work's things; that they make up a massive domain of organizational phenomena; the classic studies of work…depend upon the existence of these phenomena" (p. vii). Informed by Garfinkel and ethnomethodology, numerous studies examine how scientists work with visual representations and materials to produce the scientific finding and render a cultural object visible[2]in many professional laboratories (Amann & Knorr-Cetina, 1990; Garfinkel et al., 1981; Latour, 1986; Lynch et al., 1983; Lynch, 1985; Lynch, 1990; Suchman, 1990).

Embodied Action in Workplace Settings

Second, the focus on the interplay between language, embodied conduct, and visual representations provides a clear view of how people communicate and collaborate in solving particular problems in various, moment-to-moment workplace activities. Hutchins and Palen (1997) examine a situation in the cockpit in which the leakage of the fuel is not represented in the instantaneous state of the computer panel but the crew member's gestures perform several layers of seeing/reading the panel, providing a more complete account of the problem and what happened. Hutchins and Palen ask: "[h]ow do gesture and speech guide these shifts between the perceptual stance in which the panel is seen as a thing in itself and the perceptual stance in which the panel is seen as a representation of the fuel system" (p.37)? The answer lies in that the overall physical environment consists "multilayered representation" in which "the creation of a complex representational object is composed through the superimposition of several kinds of structure in the visual and auditory sense modalities" (p. 39). Kleifgen and Frenz-Belkin (1997) also build analyses with regard to visual representations and multimodal

[2] For instance, describing process of the discovery of the Gailean pulsar, Garfinkel et al. (1981) remark that scientific objects are not just on computer screens waiting to be discovered; scientific objects are formulated through scientists' interactive work which methodically transforms a set of markings and numbers on a computer printout into the pulsar.

characters of some task activity. They have shown that workers' "noticing" a cacophony in the machine and the propagation of such perception are both shaped and solved by perceptual structures with the use of representational tools and scientific numbers.

Third, we gain insights into fundamental aspects of the ways in which people make sense of, use, and participate in multimodal acts as an intrinsic aspect of everyday work activities with visual representations. However, focusing on problem-solving processes, these studies seldom observe that as concrete human activity, semiotic practice is as complex and mysterious and as difficult to understand as any other material practice in which participants simultaneously equipped with symbolic faculties are engaged. Charles Goodwin's (2000; 2003) model of situated practice distinguishes layers of meanings by examining the synchronic arrangement of linguistic features and the material field which characterizes an embodied action, the pointing gesture, in the professional work of archaeological excavation. As Goodwin shows, participants must constitute the meaning of their points as they are precisely deployed in the sequential and temporal framework of language as well as in a particular locus in the spatial environment lodged with material objects and representational and symbolic tools—a "semiotic field" in which multiple semiotic systems co-exist in a concrete setting.

The human body, according to Goodwin (2000), is also a special kind of semiotic field capable of instantiating the semantic meaning of language and of "elaborating" what is being both concrete and symbolically loaded in a material field (p. 31). Goodwin argues that tools (e.g. the Munssell color chart used by archeologists) do not simply function as representations. Rather, they are "lived spaces inhabited by actors who move through them while using the structure they create to accomplish the distinctive actions that make up the lifeworld f their setting" (p. 32). Goodwin's studies are directed to exploring how embodied conduct makes observable-reportable features of a scrutinized

object such as the post hole through the use of language, gesture, and representations as "lived spaces," in a metaphorical sense, that shape participants' interaction and their cultural practices. Goodwin (2003) concludes:

> In this [pointing] process, they [archeologists] make use of both language and semiotic materials provided by their setting (tools, objects sedimented with meaning and activity, culturally defined spaces such as playing fields, kitchen tables, maps, structure visible to an archeologist as color differences within a patch of dirt, etc.). The issues posed for the analysis of action in such a setting involve most simply the resources provided by different semiotic systems as self-contained wholes but also the interactive practices required to juxtapose them so that they mutually elaborate each other in a way relevant to the actions that make up the setting. (p. 238)

Goodwin's model of situated practice illuminates that representing practices are cultural practices dictated by differing material, discursive, and interactional components. Our review of literature suggests that there exist relations between language, embodied interaction, and the physical experience of talking and working through visual representations such that a work practice is created and becomes consequential for a profession's practitioner to exercise a visual/kinesthetic scrutiny of phenomenal existence. One of the central questions, therefore, must be how such relations are established among different types of visual representations, and, particularly, how professional participants' talk and work can be grounded in the body, in the material field and the encompassing semiotic field in particular way.

Although interest in gesture is of long standing, recent gesture research focuses on gesture's relation with the co-occurring speech, and the different shape (e.g., the iconic vs. the deictic gesture) and function of gesture and its typologies (see Kendon 1982 for

discussions of the history and recent trends of gesture studies). Recent studies also recognize that gesture is not simply expressive or representational. Although gesture is inherently communicative (Streeck, 1994), existing research findings provide very little account of the interactional complexity of gesture and the material environment in which the use of gesture is embedded. Goodwin (2003) analyzes the shifting meaning of pointing gestures in situated work practices and argues:

> In most typologies of gesture…iconic gestures and deictic (pointing) gestures are treated as separate kinds of gesture. This does not seem to be correct. Pointing gestures can trace the shape of what is being pointed at, and thus superimpose an iconic display on a deictic point within the performance of a single gesture. (p. 229)

Goodwin's point is that a gesture becomes meaningful by the context in which it occurs, and that context simultaneously consists of the bodies engaged, the talk that "elaborates" on the meaning of the gesture, and the larger activity and its semiotic field within which the gesture in embedded. Second, as Goodwin (2003) also reports, gaze is used as a strategy to estimate the direction of pointing; communication modalities and nonverbal behaviors are temporally aligned with each other in meaningful ways. But such a multimodal context is seldom addressed in gestural research. Third, instead of focusing alone on gesture, this study addresses the broad process of workplace communication and argues that mise-en-scène conversations constitute one context of human/workplace communication, where the complex copresence in a spatiotemporal world can be observed.

In mise-en-scène practice, as in everyday life, the slightest movement of the eyes, the slightest change of head direction, or the slightest manipulation of the material object is an inextricable part of communicative recourses and may have a profound impact on our understanding of language/communication. Speaking is traditionally viewed as

primarily a cognitive and interpretative activity in which language use is understood as representative. The model of situated communicative practice has liberated us from a conception of communication as simply information exchange (Schramm, 1954; Berlo, 1960) and will help to shape an awareness of communication as a meaning building activity that is continually shifting and changing to take account of transient and temporal sequences of language and bodily actions performed by individuals which in turn shape the transitive order of the material field.

Visual Communication

As my search for meaning aligns itself with phenomenological and situated character of action and communication, an early research question asked how people talk and interact with visual representations in their workplace settings. This question led me to conduct research in several design meetings in which the directors and the set designers discuss and communicate the set design concept, therefore routinely working with assemblages of visual materials and pictorial representations. In order to fulfill the basic expectations of a production plan, the set designer presents concepts and ideas in several forms including diagrammatic drawings that show visual elements of stage scenery or set pieces and three-dimensional models or computer simulations that show scale representations of what is possible in the actual theater (Payne, 1993, p. 34).

For example, in the first design meeting I observed, the set designer sets visual images on paper (both in plan and perspective). The set designer also combines diagrams and other visualizations into some related sequence or order by which effectiveness and appropriateness of ideas can be demonstrated to the director and other artists. The set designer also uses hand gestures to communicate his scene ideas in the design meetings.

It is during this period of work that I gained interest in understanding how different visual representations pose distinct communicative and material tasks in the mutual work environment. The analysis included in this dissertation shows how people talk and interact with types of visual representations and demonstrates that the participants constantly draw on verbal, visible, and kinesthetic modalities to construct their working and communicative practices in which the visual representations are embodied and necessarily imply the active participation of sight and touch. All these communicative processes are crucial to how participants visually formulate and solve particular mise-en-scène problems and help us to understand the constitution of the social and professional worlds in which participants live.

In particular, Kress and van Leeuwen (2001) take both "multimodal" and visual approaches to how teachers and learners interact with visual representations in school classrooms (see also Jewitt et al., 2001; Kress et al., 1998; Kress, 2000; Kress et al., 2001). The multimodal and visual perspectives extend communication to refer to all meaning-making and semiotic systems used in the context of interaction. Kress and van Leeuwen term these systems as "modes," which describe means of representation including language, gesture, and drawing that teachers and learners constantly use to express meanings in the classroom. Visual modes are integrally part of everyday verbal and nonverbal communication. Visual communication, or visual literacy, studies and identifies how multiple modes such as images, words, embodied actions, and gestures all depend on each other to create whole meanings (Kress & van Leeuwen, 2001). Kress, Ogborn, and Martins (1998) propose that in some visually-dominated culture such as in the science classroom, "language is always one of a number of semiotic (communication/representational) modes in use in any act of communication, and that language may not be the central mode" (p. 69). The authors provide a condensed account

of a science lesson on plate tectonics. They have shown that for most of the lesson the curricular content of the topic of plate tectonics is carried gesturally and visually. They describe both the verbal and the visual communication process in the science classroom:

> He [the teacher] takes a contour map out of a large envelope; one of the students is asked to come and hold one end. The teacher shapes out the contours with his finger: 'this bit down here // where this bit sticks out here // can you see // this bit of South America sticks // sticks out here// and just here // look // there's this sort of bit of Africa // that's got this kind of armpit //'.
>
> He puts down the map, and begins talking of continental drift, making a sphere with both hands. While he is explaining this, he moves his hands apart, and then together again. As he explains the various forms of plate-movement, his hands show what the plates are doing: first the two hands rub alongside each other (illustrating 'conservative movement'), then one pushes underneath another (showing subduction), and the fingers of the lower hand are pushed up between the fingers of the top hand to show the forming of volcanoes as an effect of the subduction of one plate, etc…..Different kinds of plate movement and their effects are explained gesturally: the formation of the Himalayas; the San Andreas fault; etc. (pp. 71-72)

The authors therefore argue that on the one hand, the teacher's repertoire of modes and semiotic resources constitute and transform the communicative process. The topic of plate tectonics is visually constructed. On the other hand, maps, drawings, and the visual representations are not in themselves transparent. The meanings of maps and drawings are always contextualized within other modes such as talk and gesture. They continue to write:

> Talk is clearly a constant in this lesson, but it is far from being the only mode

> of communication. It is there as one of a range of modes, predominantly with gesture and with visuals, but also with the science apparatus which is used to model certain phenomena….At all times talk is accompanied by other modes. At times one of these modes becomes focal. So the map — a complex image — becomes the focal mode of communication, and the talk takes on a deictic function in relation to the map, which is now the central communicational mode….In this particular instance the view from the satellite reveals at least four major communicational modes: talk; images; gesture; the physical/material apparatus; all are brought together in a tightly orchestrated ensemble, an orchestration in which one mode and then another carries the tune, so to speak. (p. 72)

One of the most important characteristics of the visualization process in the classroom is the fact that the construction of scientific knowledge is a visual and semiotic process that occurs across various modes. Kress (2000) uses the term, multimodality, to describe the diversity and visual complexity in everyday talk and communication (see also Kress & van Leeuwen, 2001). Indeed, to see the whole complex communicational landscape, communication scholars need to see communication as taking place in a multiplicity of modes. These modes, as Kress et al. (1998) point out, consist "motivated signs in which substance/material are brought together with communicational intent" (p. 88). The visual strategies and interests are not communicative practices specific to teachers' or learners' discourse in science classrooms. Cox and Robinson-Pant (2006) propose that visual communication implies and enhances children's participation in class councils meetings. They have observed how a range of visual and activities and methods—such as mapping, drawing, card ranking, time lines facilitate discussion.

The value of drawing not only creates opportunities of the inclusion of younger or less literate children, but became a positive means for individual children to make a point more effectively than when relying on talk alone. Cox et al. (2003) also observe that "ideas boxes" give the children a concrete representation of the subject of their debate. In the meetings, the "ideas boxes" were laid out on the floor with the objects inside. The children arranged and picked up the objects and decided which of the subjects they thought was the most important to be discussed by the school council. It is important, firstly, that children are able to identify and make use of the variety of modes of communication to participate in their democratic lives. Secondly, ideas and agenda are represented in drawings and manually arranged in ideas boxes so children actually communicate in complex sequences of verbal, explanatory, and debating structures realized in a dynamic interplay of several semiotic modes which are frequently made use of in class councils meetings.

The links that connect all of these visual phenomena are based on the communicational intent and strategy to interact with co-participants and with cultural content. In addition to the process of interaction framed by the use of language, there are also images, bodily conduct, and semiotic resources that make up a continuously evolving built environment of great visual diversity in human communication. The point is that communicative understandings and participation refer to meanings that are not solely located either in drawings, maps, or ideas boxes, but in a set of semiotic relations created and instantiated by the context of interaction. In human interaction, images and visualizations are not just copies of realities or representations. They are the way in which speakers visualize themselves and how they communicate with each other. The construction, use, and distribution of images and visualizations are also fundamental to the theater community. The process of theater making is an intensely creative act. Visual

communication and visual worlds play important roles in the creative engagement. Artists' communication also depends on images, drawings, and ideas boxes simultaneously supported by talk and gesture. Language is not the major mode for carrying information, expressing thoughts or exchanging ideas. Relations of visualized meaning and communication drive the process of interaction in set design meetings. For example, the model box is visually effective enough such that cardboard cut-out figures can be "directed" linguistically and gesturally in almost the same way as live actors. There are also many situations when the artists use storyboards and drawings to visualize characters, setting, and scenes. The crucial point is that set design is realized through the close interaction between visual, linguistic, and gestural communication.

Discourse and talk in workplace settings are multimodal. Visual communication theory brings a multimodal perspective to research in workplace settings or in institutions and has a number of advantages over perspectives which focus primarily on language-use (see Drew & Heritage, 1992). First, it focuses on a wide range of resources used in communication process, including talk, speech, image, and bodily conduct and action. Second, a multimodal approach expands notions of "mise-en-scène" work (about text and scenery). The interpretative work of making sense of the dramatic text, scenery, or architectural drawing is often rendered gesturally. The artists' actions, postures and movements often visually embody discourse, text, scenes and characters. In this way, the artists' actions, postures and movements enliven the image world of architectural drawings, three dimensional models, and computer animations. Third, the "visual realization of meaning" is crucially important for understanding how the artists build scenes through both discourse and actual doings. Jewitt el al. (2001) argue:

> We are not suggesting that the linguistic realisation of meanings is no longer important, we are, however, suggesting that the visual realisation of meaning is

> important. Learning can no longer usefully be considered a purely linguistic accomplishment. Within this multimodal environment, social semiotics with its emphasis on the many modes we use for representing and communicating and its insistence that signs come about as the reflection of the interest of their makers provides a framework for rethinking learning, for looking in detail at what pupils "do." (p. 17)

Similarly, mise-en-scène work is a very material activity. The sculpting of spaces, scenes, or dramatic places is often achieved in the simultaneous presence of language, gesture, and image worlds. Hence, a multimodal approach to visual communication enables this research to demonstrate a scene in the workplace in which the envisaged world of the drawings, elevations, model boxes, and computer animations and the communicative work across modes are made up of the artists' discourse and dramatic imaginations.

Microanalysis of Interaction

Fourth, one of the main approaches in qualitative research in the field of communication studies is that of symbolic interactionism, deriving from Bateson (1971) and Mead (1934). One of the chief exponents of its ideas is that a person is a creator or constructor, who continually interacts with the world. In this interactive process, the individual builds his or her action, adjusting means to ends, which both influence and are being influenced by structures. Symbolic interactionism emphasizes on the self, construction, and interaction. This intellectual paradigm inspires the perspective on interaction and on the actions and sensemaking of participants in social/cultural settings. In particular, Erickson's (1986;1992) microanalytical approach combines traditions of ethnography of communication and interactionist methods. This "perspective and approach unpacks the social organization of verbal and non-verbal behavior as it occurs simultaneously and during interaction" (p. 161).

In specific, Erickson (1992) articulates that "ethnographic microanalysis of interaction" is an appropriate framework for specifying ordinary life in specific social settings and processes of social influence as they occur in face-to-face interaction. Although Erickson focuses specifically on social interaction in educational settings and among teachers and students, ethnographic microanalysis of audiovisual recordings usefully emphasizes the importance of accurate information on the verbal and nonverbal behavior of particular participants in a social scene. Erickson (1992) points out the significance of doing microanalysis of interaction:

> It is also important when one wishes to identify subtle nuances of meaning that occur in speech and nonverbal action—subtleties that may be shifting over the course of activity that takes place. Verification of these nuances of meaning—especially of implicit or cryptically expressed meaning—can help us see more clearly the experience in practice….The microanalytic study of how interaction occurs is especially appropriate when one wishes to reproduce an exemplary practice….Detailed analysis of the how of interaction, in contrast to emphasis on its what, is also appropriate when one wants to change an existing educational practice. (p. 205)

The organization of interaction itself as a social process extends ethnographic perspectives and scopes, which aim at revealing what is inside the "black box" of a community's life. Erickson (1992) argues:

> In attempting to change interaction patterns, it is often important to see their social ecology as richly and precisely as possible—to see, for example, how listeners influence speakers while the speakers are talking, how the timing of speech and nonverbal action can make intellectual points more or less salient and coherent in group discussion, or how reinvoking something said earlier in a conversation can

> make clear to participants where their thinking together has been heading and how it has been developing. (p. 205)

Hence, the phenomenon of interest is interaction as it is socially organized. This dissertation is interested in how people organize their participation and accomplish their design tasks through both verbal and nonverbal conduct. It investigates participants' roles as active communicators and constructors of mise-en-scène knowledge and purposeful shapers of their actions. An inquiry based on Erickson's ethnographic microanalysis of interaction has helped me appreciate that any workplace event must be regarded multidimensionally from the perspectives of all communicators and enactors of knowledge.

First, Erickson's ethnographic microanalysis begins with a limited first-hand observation and a broad-stroke exploratory analysis of a wide set of audio-taped and video-taped data. Second, these dada become increasingly more narrow and purposeful. Erickson focuses us in how data can be organized by identifying "patterns of generalization within a case" (Erickson, 1986, p. 148). Interactional patterns that seemed to be present from reviews of the field-notes and audiovisual tapes not only drive a closer examination of particular segments of social interaction, but also serve as analytic constructs among many examples of participants' actions. Third, the interactional excerpts will then be transcribed in a turn-by-turn fashion using discourse analytic methods. The discourse analytical methods are used to discern the function that specific linguistic devices served in the dialogue as well as how they relate to participants' roles and processes of knowledge construction (Erickson, 1992).

My purpose in this dissertation is to provide a theoretical discussion that will assist readers understanding and considering how participants talk, communicate and become engaged in theater design projects because the communication process provides a way to

understand how participants assume orientations necessary to participate in collectively imagined situations. This analysis employs insights and procedures from the ethnographic microanalysis of interaction (Erickson, 1986; 1992). In this dissertation, my analysis begins with the creation of content logs of videotapes documenting the activities of the group discussion during the design meetings. My analysis includes simple descriptions of what happened in these design meetings and analytic notes discussing events at a more theoretical level. Microanalysis of interaction provides an interpretive frame that describes actors who are inspired by a particular set of concerns to participate in a narrow range of meaningful activities. Moreover, using the comparative method developed by Glaser and Strauss (1967), categories and themes of interaction are compared and constructed through reference to contents and excerpts of video and audiotapes. Communicative events are selected and transcribed to analyze in detail how participants oriented themselves to particular and dramatic worlds in interaction. The discourse analytical framework is also employed to examine how participants use talk and embodied activity to position themselves and others in relation to activities and design ideas (Erickson, 1982; Goffman, 1981; van Dijk, 1985). In sum, Erickson's microanalytical approach to studying classroom interaction supports this study an analysis of participating artists' verbal and nonverbal engagements with various material and imaginative worlds over the course of design meetings.

Combining these theoretical perspectives, this dissertation examines the communication process in design meetings in Taiwan. Chapter Two discusses procedures and issues related to the methodology of this research. Chapter Three is a micro-analytical investigation of mise-en-scène conversations and probes talk and embodiments and their relationships to the material and semiotic fields of scenographic drawings. Chapter Four presents a realm of mise-en-scène activity in which people talk and interact

with the miniaturized representations of space—the three-dimensional model of the set on a smaller scale. Chapter Five includes the interpretation of a new medium of visual representation—the computer design software, Maya. The source of the virtual is both technologically and multimodally grounded to newly acquired technological, mise-en-scène experiences provided by Maya. Chapter Six summarizes and restates significant findings of this study, also identifying limits of this dissertation and possibilities for future research.

Chapter 2

METHODS AND PROCEDURES

I gained the signed agreements to observe four design projects involving the SBL theater design and consulting company. The set designers in the SBL company were asked for signed permission to videotape and analyze the talk in the design meetings. I also gained signed permission from other participating artists. The data were collected in twelve design meetings and consist of about fifty hours of videotaped meetings for the total of four design projects. The primary criterion for inclusion in this research was simple: the individuals collaborating on the production had to be artists, mainly the set designers and the directors, or technical crew members of consequence.

Participants, Data Collection, and Ethnographic Background

The SBL theater design and consulting company is a professional company with experience in set design and construction in Taipei, Taiwan. The company designs and builds theater sets and stage scenery for commercial, professional, or avant-garde theaters. Two set designers, Chen and Jen, and three technical crew members work in this company. For the purpose of confidentiality, the name of the company has been altered and the names of the theater artists who participated in the study have been changed. Other set designers work on a freelance basis. A theater production is a cooperative effort. It also involves the director, the producer, or even the artistic director, depending on the complexity of the production. Usually the director of a theater play will form the production team, searching and hiring creative staff such as the set designer, the lighting designer, the costume designer, and the technical staffs. These people will work together in different phases of theater production. Usually, the set designer will lead the creative team and maintain communication with the director to communicate the set design and

aesthetic concept in the phase of pre-production, assuring that the physical elements of the production match the decisions made in the final phase of production. The set designer will work with the technical team to ensure that the craftsmen executing the physical production are aware of any changes made during the director's work with the performers. In the SBL company and in the design meetings I observed, although the production team pays the set designer for what he or she had done, the director/set designer relations, are cooperative rather than hierarchical. A theater design is conditioned by the artistic merit of the set designers. Instead of playing a “supervising” role, the director constantly meets with the set designer. In their discussions and from their respective professional angles, they work collaboratively and meet routinely, communicating and negotiating an aesthetically pleasing and workable set design for the show.

I participated and observed four scene design projects that the set designers from the SBL company completed. Each design project involves different directors and producers. In terms of the details of scene design work, scene designers usually begin their preparations by familiarizing with the play and the production concept. Before they make sketches and plans, scene designers continue to meet directors to discuss the script, the play, the performance style in order to gain clues about scene demands. Brockett (2000) outlines some design issues in early design meetings and discussions:

> During this process, they [scene designers] accumulate information of various sorts: the number of locales; the types of locales (prison, living room, park, and so on); the amount of space required by the action in each scene; the arrangement (location of entrances and exits, placement of furniture, need for steps and levels, and the like) required by the action in each scene; the period, geographical place, and socioeconomic conditions; and other factors that influence the scenery.

(p. 373)

Designers use initial design meetings to elicit these ideas from other artists such as directors or artistic directors. Utilizing these information as well as their imaginations, scene designers formulate the design concept. There is no standard way of moving through the design process. The design concept may be altered and modified if the directors have special, scene demands. As said, the design process is not linear. Most designers make tentative scene sketches as a means of thinking through possibilities and communicating to directors. Brockett (2000) also observes the importance of visual representations in design work and meetings:

> However they work, designers eventually arrive at preliminary designs to present at a conference with the director and the other designers. (Design decisions involve not only how the settings function as acting space but also how they relate to costume and lighting designs the total "look" of the production.) Through a process of reaction and revision, tentative agreement is reached, but before the designs are given final approval, they must usually be rendered as perspective color sketches that indicate how the sets will look on stage when lighted. Scene designers must also supply floor plans (drawn to scale) that show the layout of each set on the stage. Designers may also be asked to construct three-dimensional scale models that show in miniature how each set will look when completed.
>
> (p. 376)

As Brockett has described, the design meetings rely heavily on a set of drawings or a scale model to move through group discussions of the set design. In addition to drawings and sketches, set designers also need to make construction drawings such as front elevations which show the stage scenery in two dimensions from the front. Nowadays, with new technologies, set designers make the perspective sketches, front elevations,

scale models, and even animations and simulations of moving scenery with design applications such as CAD or Maya. All these images and visuals are outputted on the computer screen. Hence, in some design meetings, artists work in front of the computer and move through the scenes with keyboards and cursors.

As I observed throughout the design process and throughout the entire preparation work in the SBL company, design ideas come and go with every artist needing to retain flexibility. A developing scale model of the set may trigger a fresh idea for the director which may in turn stimulate the set designer to respond by modifying or amplifying a visual aspect. The communication process is continuous. More importantly, the most sophisticated design ideas and concepts are communicated through visuals with the various ways, as mentioned above, that those ideas and concepts can be presented on paper, model, or computer screen. For this dissertation, I observed a total of twelve design meetings for four different design projects of four theater productions in Taiwan. A total of nine artists consented to participate in this study. These design projects involve different plays. In three design projects, either Chen or Jen from the SBL company was the set designer. In one design project, both Chen and Jen were the set designers who collaborated on the set design of an ancient Chinese opera (see the following chart for the design projects and participating artists). The background of each project will be specified in detail in each chapter. All the design meetings took place in the SBL company. Data collection occurred as follows:

Design Projects	Approximate Hours	Number of Cameras	Participants (Gender)
Dream	6	1	Set Designer Chen (Male) Director Yiling (Female) Technical Director Ken (Male)
Modern Chinese	8	1	Set Designer Jen (Male) Director Keming (Male)

Opera			
Peony Pavilion	22	1	Set Designers Chen and Jen Producer Wei (Male) Director Kim (Male) Artistic Director Lin (Male)
Birds	14	2	Set Designer Jen Director Keming Technical Director Lu (Male)

Analyzing and Recording Embodied Action

The primary method of analyzing data is "visual analysis" (Goodwin, 2000), which is based on an ethnomethodological approach to investigating the naturally occurring talk and lifeworld of a community of actors, in this study, the theater community. In Goodwin's visual analysis, vision is central to the research process which also reflects, to some degree, artifacts of research methodologies and results:

> The visible bodies of participants provide systematic, changing displays about relevant action and orientation. Seeable structure in the environment can not only constitute a locus for shared visual attention, but can also contribute crucial semiotic resources for the organization of current action. (Goodwin, 2000, p. 157)

One important aspect of the ethnomethodological forms of visual analysis is to demonstrate how participants themselves not only orient to particular kinds of visible behaviors (e.g., the visible display of postural orientation), but use them as a resource or a constitutive feature for the organization of the current activity in which they are engaged. Hence, when doing visual analysis of social interaction, researchers should avoid premature theory building. Researchers put emphasis on a large complex constituted by visual phenomena of the visible body and gesture and the details of talk which co-occur in the mutual surround of activity. Researchers also need to demonstrate how these

different visual phenomena are oriented and organized by participants themselves as relevant and sufficient to constitute social action in a local setting.

Second, in Goodwin's visual analysis, the focus of analysis is not bodily conduct or a material object in isolation, but instead the whole practice engaged by participants in interaction. When analyzing the visual phenomenon of a piece of data, analysts should be able to identify the structure of practice whereby participants or the interacting bodies accomplish their tasks:

> Visual events, such as gaze, play a central role in this process but their sense and relevance is established through their embeddedness in other meaning-making tasks and practices, such as the production of a strip of talk that is in fact heard and attended to by its addressee. This links vision to a host of other phenomena, including language and the visible body, as an unfolding locus for the display of meaning and action. (Goodwin, 2000, p. 160)

Thus, a visual analysis also accounts for the complexity of practice in terms of knowledge production to be understood with other embodied behaviors occurring within an interactive context that participants construct. As these two analytical considerations guide this research, it is relevant to consider how people orient interactionally, point to objects, grasp objects, or use the structured, material surround to produce an activity; it is not possible to recover the details of talk and these visible behaviors through field observation alone.

Video recordings help provide these visual resources as well as provide access to the fine details of bodily conduct, talk, and the material settings in which action and interaction may arise. Jarmon (1996b) has described how new technology creates a way of seeing, representing, and researching. New technology adds a new experiential layer of

our method of analyzing data. She argues that digital video technology offers “a six-dimensional representation.” She points out:

> 1. The images from the analog videotape already provide for the experience of three-dimensional representations.
> 2. The analog images move, adding temporality, a fourth dimension.
> 3. The digital moving images are nonlinear, the uni-directionality of time and the conventional uniformities of spatial representation can be manipulated, adding a fifth dimension.
> 4. The technology affords the co-presence of sound, and this aural domain adds a sixth dimension to our enriched representation of face-to-face human interaction. (Jarmon, 1996, Chapter Two)

The six-dimensional representation invents a practice for seeing micro-phenomena that organize the lifeworld in which participants inhabit. In addition, cinematic decisions guarantee analytical considerations which enable researchers to map local ecologies of human interaction:

> In sum, the use of recorded data serves as a control on the limitations and fallibility's of intuition and recollection; it exposes the observer to a wide range of interactional materials and circumstances and also provides some guarantee that analytic considerations will not arise as artifacts of intuitive idiosyncrasy, selective attention or recollection, or experimental design. (Heritage & Atkinson, 1984, p.4)

Without any doubt, when setting up the camera, the researcher’s cinematic decisions become influential in the “quality” of data and the “visibility” of phenomena. Heath and Hindmarsh (2002) suggest that when recording interaction, researchers should keep the following things in mind. First, researchers should position the camera in order to capture

as much of the face and bodies of participants as possible. It is the best if researchers can set up the second camera, choosing a wide enough angle to accommodate basic shifts in orientation and movement by participants. Second, in order not to disturb participants' activities, researchers should leave the camera stationery and running in the setting.

Following these two main directions, in every design meeting that I observed and in which I participated, I attempted to select an angle that enabled me to clearly see participants' faces and bodies and the objects on the desk (e.g., the architectural drawings or the scale model). After the placement of the camera was made, I left the camera stationary in an appropriate angle with wide enough camera scope. In terms of analyzing and transcribing visual data, with multimedia computer programs, I transformed the video-taped materials into digitized formats which allowed me to repeatedly watch and easily track a specific moment wherein the emergence of gesture, talk, and bodily conduct could be located and determined.

In terms of transcribing visual behaviors, Heath and Hindmarsh (2002) point out, "There is no general orthography used for the transcription of visual and tactile conduct, but over the years researchers have developed *ad hoc* solutions to locating and characterizing action" (p. 20). Indeed, if one chooses to describe nonverbal behavior, different representations are possible, and all have benefits and drawbacks. The most common method used is what is known as a ''second-line'' transcript, in which the nonverbal behavior is set off by parentheses from the verbal channel. There are also transcription symbols for nonverbal behavior, attributed to Goodwin (1981) and used by others working within the CA framework, for showing how gaze (Heath, 1984) or gesture (Schegloff, 1984) can be represented. Other methods that have been used include diagrams showing how participant position and gaze (Egbert, 1997), hand drawings

(Haviland, 1996; McIlvenny, 1995) and visual renderings or 3-D collages of video frames (Goodwin 2000, 2003).

Usually the transcripts of visual fragments are represented on a two-dimensional page. The transcripts tend to lay talk and the details of bodily conduct horizontally across the page. However, embodied action often occurs simultaneously with talk. Moreover, human action is designed to be seen and interpreted visually. Instead of including many descriptions of nonverbal conduct in the transcripts, this study relies on visual images and graphic renderings of video clips. For example, the shape of a hand gesture in motion can be captured and visibly rendered using the computer graphic program, the Adobe Illustrator. The images and visual phenomena that receive particular analytical attention in this dissertation are graphically rendered and included in the conversational excerpts. As visual graphics are also an interpretation of embodied action, the graphic process constitutes one particular way of observing, analyzing, and transcribing visual data in this research, while inadequacies of fit among linear systems of transcriptions open fissures that motivate future research efforts to modify or build visual transcripts more directly related to embodiments.

In this study, the analysis focuses on both talk and embodied interaction in the design meeting time. Simple descriptions of nonverbal behaviors are sometimes set off by parentheses. For the purpose of clarity, most instances are included as video frames or visual collages. According to the consents we gained from participants, the faces of some participants are blurred and information about these meetings is purposefully inaccurate in order to preserve the participants' anonymity.

To summarize this section, new technologies create new ways of researching and analyzing data as well as open up new analytical questions (e.g., a micro organization of bodily movements or gazing activity) and produce more accurate, visual analyses of

people's interaction. Microanalysis of interaction presupposes, as mentioned above, "the six-dimensional representation" of people's everyday life; a new researching practice derived from the development of technologies and a very delicate system of recording and transcription. By virtue of new technologies, a researcher's eyes and ears capture participants' verbal and bodily activities in their methodological dimensions, but field notes taken by traditional ethnographers also provide a way of looking at data. In the next section, I explain the procedures of analyzing and transcribing conversations and the use of field-notes in my research.

Analyzing and Transcribing Conversations and Field-Notes

In addition to visible phenomena, people's conversations were transcribed by the researcher using conversation analysis[3] conventions originally developed by Gail Jefferson (see Appendix A). The researcher also translated these conversations from the original language, Chinese, to English. A literal translation is indispensable, but researchers should realize that translating is an activity that involves more than going from one language to another (Duranti, 1997). One way to enrich the translations is start translating in the field, producing an "annotated transcript" (Schieffelin, 1990), a written text where the representation of talk is simultaneously informed by contextual information that is relevant to the ongoing talk and interaction. The second translation problem relates to ways of making and presenting transcripts with translation. Duranti (1997) has listed four formats for making transcripts: (1) translation only; (2) original and parallel translation; (3) parallel translation and morpheme-by-morpheme gloss under the

[3] Although a full discussion of the problems inherent in transcription is beyond the scope of this paper, a few brief comments should be made. Ochs (1979) in ''Transcription as Theory,'' argued that biases may creep into the transcription process, in ways as simple as privileging topmost and leftmost information, so that, for example, the verbal speech is usually prioritized over nonverbal behaviors. It is important to recognize that transcription is not merely representational, but also interpretive and value laden. Ochs also points out that there is really no ''standard'' available for transcription, and each researcher is left to herself to develop or employ a system that suits the research purpose.

original; (4) original, interlinear morpheme-by-morpheme gloss and translation. Duranti reminds us that there is no such a thing as a perfect transcript, but only one that is better than others for specific needs or academic purposes.

This study is interested in the sequential organization of language and embodied actions and the overall communicative process of mise-en-scène conversations. A simpler version of translation and transcript, that is, the original language and parallel translation, will be provided. It is true that the validity of the translation is enhanced by appending a morpheme-by-morpheme gloss or word-to-word translation. To overcome the validity problem, I invited another bilingual speaker to review the translation. My method of data analysis is informed by both conversation analysis and Erickson's "micro analysis of interaction." The videotapes were transcribed, watched, and listened to carefully and repeatedly. My method of analysis also grants primary importance to naturally occurring utterances and bodily actions. The videotapes allow me to observe and grasp the finely detailed understandings of participants' moment-to-moment interaction. As said, such a method is also pre-determined by conditions for concrete research operation, such as audio-visual recordings (Goodwin, 1993; Heath, 1997) and field participation in which the researcher tries to be as unintrusive as possible.

The field notes add sociocultural context in moment-to-moment communicative interaction. As reviewed in the previous chapter, Erickson's (1986) method of microanalysis of interaction also helps to put far-reaching research questions which are partly related to our subjective observation of the interaction in the field and partly related to our knowledge interests in multimodalities formed by hearing, vision, touching and so on (McIlvenny, 1995). Taking field notes is one of the best ways to observe whatever happened and whether the tape is running or not. Duranti (1997) again notes that new tools and electronic devices should not replace traditional ways of taking

ethnographic notes. This is because there is an “experiential, subjective dimension of ‘having been there’ that is not quite visible or audible on a tape” (p. 115). This experiential dimension includes writing down ideas that struck us at a particular interactive moment and all these ideas and memory also help us in terms of how we analyze and recontextualize the data.

I also briefly interviewed each participant regarding his or her job content, position, and expertise. Other ethnographic research materials included production notebooks, literary drafts and notes, newspaper cuttings. The dramatic synopses of the plays can be found in Appendix B. I also I approach the socio-cultural problem from a broad ethnomethodological angle and a discursive tradition that address the general background of situated action. For example, the symbolic aspects of participants such as their social identities and professional status are used for interpretative purposes if there is evidence in the behavior of the participants that they are indeed orienting to these aspects for the construction of the local scene and interaction (Schegloff, 1992). Given the importance of the artists' roles in the workplace talk studied in this dissertation, most of the participants are identified in the text by their job positions.

In sum, within the methodological frameworks of interaction analysis and visual analysis, this research attempts to observe and study a range of communication phenomena, from the interplay between talk, embodied action, and material structure in the environment where action and interaction are situated. Videotape records, linguistic transcripts, and field notes are brought together within a common analytical framework of ethnomethodology and situated practice. The chapters that follow investigate the general practices and embodied actions in the mise-en-scène communication.

Chapter 3

USING ARCHITECTURAL DRAWINGS TO COMMUNICATE

Introduction: Architectural Drawings in Human Communication

As stated, set designers not only design things, but also design with things. The scenography, as defined by Oxford English Dictionary (1989, 2nd edition), is the representation of a building or other object in perspective or the perspective elevation. It also means scene painting or the design of theatrical scenery. Here, I use the term, "scenography," to refer to the various kinds of design drawing of stage scenery. In particular, my data lead me to focus on two types of visual representations-the front elevations and the ground plan of stage design. Visual representations, particularly, graphic drawings of various kinds, are used in a variety of human activities to depict and make spatial phenomena visible. In the previous section, we have reviewed studies and shown that visual representations can shape people's communicative structures and behaviors in various work domains and disciplines.

Specifically, Ochs et al. (1994) describe visual representations and graphs used in a professional laboratory as "liminal spaces" that can be shaped by human gestures; at the same time, affect sensations in particular ways. Their study shows that participants seldom engage in a purely scientific dialogue analogous to mathematical logic or geometrical planning as delineated in the graphic drawings. It is the figurative language (e.g. storytelling) and human bodies that function as a direct agent of scientific and graphic composition, where the bodies touch, rest on, trace, or journey through planar elements of the graphic space. Bodily actions in turn enable scientists to shape and formulate the scientific hypothesis around physical actions and movements.

The design drawing and scenography also incorporate possibilities for sensual engagement in seeing and reading between the geometrical lines. Robbins (1997) defines that the architectural drawing is "the phenomenal representation of a conceptual practice" (p. 24). Fraser and Henmi (1994) note that all architectural drawings are design drawings by virtue of their contribution to the architect's or designer's conceptual practice of imagining and envisioning a building, a design or a material object. In line with the notion developed by Ochs et al. (1994), design drawings also occupy liminal spaces between the material and immaterial; between the diagrammatic and perceptual; between the representational world of the visual display and the world constructed and indexed by bodily conduct. When discussing the way in which the drawing "draws things together", Latour focuses on the haptic and kinesthetic elements directly derived from the materiality of the thing or the artifact such that the drawing paper is flat with a tactile surface (Latour, 1990, p. 137). The drawing makes people touch; makes people "see and speak." Depicting the architectural drawing as the diagram, Deleuze (1988) writes in "Foucault:"

> The diagram is no longer an auditory or visual archive but a map, a cartography that is coextensive with the whole social field. It is an abstract machine. It is defined by its informal functions and matter and in terms of form makes no distinction between content and expression, a discursive formation and a nondiscursive formation. *It is a machine that is almost blind and mute, even though it makes others see and speak.* (p. 34; emphasis added)

The design drawing is materially constituted, yet a sensory space, a representation of the world both perceived directly through the inward eyes of human imagination and mediated by the words, the sight, and the physical expressions[4]. The design drawing

4 Lefebvre (1991) even argues that human movements should exist prior to any configuration and representation of any space. He writes, architectural drawing "overlooks the core and foundation of space,

constitutes what Pérez-Gómez (1983) describes as "techné-poesis" which signifies the mode of knowing, yet is always grounded in and by human action itself. Under phenomenology[5], the conversational fragments and extracts included in the following section address individuals' situatedness in the world of and with visual representations. The world of paper, elevations, ground plans, blueprints and so forth must be embodied[6] in real-time design and communicative processes, in the coalescence of improvisation, creation, and interpretation. The purpose of my analysis in the sections that follow is to show that when interacting with design drawings, participants draw on the richness provided by a synthesis of sound, touch, and movement and are, as a result, capable of not only representing objects delineated on the drawing paper, but also supplementing such perceptions and imagination toward the lifeworld or, in our case, the "scenography" as a multidimensional and multisensual realm. I show that participants constantly turn to embodied actions and communicative interaction as sources of insight into their collaborative "envisioning" of materials things, dramatic actions, and spectacular phenomena altogether, that is, of what we describe as "scenographic imagination."

Design Meetings in a Theater Workshop

In order to understand mise-en-scène communication, we need to analyze the communicative process within the context of the activity and settings where the conversations occurred and the visual representations were used to display the spatial

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the total body, the brain, gestures, and so forth. It forgets that space does not consist in the in the projection of an intellectual representation, does not arise from the visible-readable realm, but that it is first of all heard (listened to) and enacted (through physical gestures and movements)" (p. 200).

[5] Leach (1997) points out that semiological approach addresses how architectural drawings can be read semantically and technologically. However, such an approach ignores human presence in the drawing. Drawing on Barthes' concept, Leach argues that "humankind has the capacity to attach meaning to even the most technological of artifacts" (p. XV).

[6] Cardinal-Pett (1998) argues that in the history of architecture "architectural representation has not been so disembodied" (p. 133). He describes that historically ancient architectural practices had presence. As he notes, "the Greek attitude toward making buildings had much in common with storytelling or musical performance: it requires active participation of both listeners and performers, builders and designers, people and buildings" (p. 133).

configurations of the set design. In this part of research, I see architectural drawings as playing a key role in the mise-en-scène-communication. Usually, the scene designers communicate their design ideas to directors and other scene artists through a set of draftings in the preliminary phases of the theatrical production. A full set of draftings may consist of a composite ground plan, scene ground plans, section, and front elevations. Individuals explore their conceptions of the imaginative, spatial phenomena through these architectural drawings. In this chapter, conversational excerpts from two design meetings for two theatrical productions were analyzed. First, the *Dream* is an avant-garde theater piece, in which dancers will perform and interact with visual images projected onto the backdrop of the stage. The second design project is a modern Chinese opera, in which music is the primary consideration. In this modern Chinese opera, the diva will share excerpts, sing the songs, and perform her life story on stage.

In the design meeting of the theatrical production—the *Dream*, I observed and videotaped the communicative process. The set designer was Chen. The director was Yiling. My field-notes indicated that the theater artists worked closely. The director and the set designer constantly met in order to discuss the design concept for this production. As mentioned, in this dance piece, the dancers will interact with visual images projected on the projection screens on the stage. In earlier design meetings, working drawings of abstract set designs were presented, studied, and discussed among the director and the set designer. After discussion with the director, the set designer drew the front elevations of the set designs in which concrete scene pieces and stage projections are defined two dimensionally. I observed and videotaped the mise-en-scène conversations in which the director, the set designer, and the technical director met to discuss the visual details of the proposed designs based on the architectural elevations, which offer a front view of the scenery. In this meeting, the front elevations served as the primary medium by which the

set designer communicated his scene vision to the director. In this meeting, the participants sat around a big table in the SBL company. On this table, several architectural elevations were placed together in front of the participants. The conversations were recorded by a video camera, which was located across the big table and positioned in a way to capture participants' nonverbal conduct and upper torso movements.

Set designers and directors must also understand scene construction techniques. I also participated and observed the design meeting for the theatrical production of a modern Chinese opera. As said, in this production, music is the main consideration. As a result, the set design was very simple. The stage space was characterized by the placement of furniture and props. The set designer, Jen, and the director, Keming, spent more time discussing the construction drawings. In the design meeting I observed and video-taped, a blueline, composite ground plan of the stage was placed on the desk. The director and the set designer Jen met to discuss construction techniques that will have a bearing on the use of the stage for theatrical performances. They faced the ground plan, sitting around the desk. In this meeting and through their talk and interaction, participants accumulated information and mapped the simultaneous use of different stage areas in a certain scene. They discussed the sizes of these performing areas. They simulated the location of entrances and exits and envisioned the placement of furniture, the need for steps and levels and the like, and the construction details and techniques. I placed the recording machine close to both the participating artists and the desk.

Bodies as Props

My analysis in this section will demonstrate how participants discuss the front elevations of stage scenery and visually and kinesthetically create the concrete images of

the set or the props to be designed. The front elevation as one kind of architectural drawing delineates the façade or the front appearance of the building or the design object. As an architect and a designer takes up drafting tools such as parallel rules, triangles, and dividers to construct plans, sections, and elevations, they enter "a two-dimensional design world of lines and angles" (Mitchell, 1996). Designers draw plans in their office and these plans are to be negotiated with their clients. Schön's (1983) research reveals that design conversations between the designers and clients become negotiating and problem-solving events where design drawings are often connected with culturally empowered images, ideas, situations and geometrical lines are contextually loaded and angles are plotted with tectonic characters. This reflects what Lefebvre (1991) has stated, "the user's space is lived space- not represented" (p. 145).

In design as well as in mise-en-scène conversations, participants constantly reconfigure a symbolic point, line or space. The tactile or kinesthetic features and the three-dimensionality of the space and things are reduced to lines, angles, and geometric shapes in visual representations but can always be performed and transformed vividly in moment-to-moment talk and interaction. All these moments constitute what Frascari calls a "metonymic procedure of design" (p. 243). Indeed, according to Lloyd (2001), architectural drawings only provide the "first level of prototyping" (p. 74). Hence, the visual representation, language, and gestural conduct play a "modeling" role in design discussions:

> In architecture, graphic design, or industrial design, a design is sketched, drawn, and modeled in a series of "physical" ways of expression. For these disciplines, it is easy to see how these physical objects can be "performed" …by pointing, gesture, and explanation. (p. 74)

The point is that, in design situations, the information is often received kinesthetically, not conceptually, and is all the more valuable for having been experienced physically, not abstractly. These theoretical underpinnings focus us on the way in which the set designer presents his design proposal for a stage scene and the way in which participants communicate the set design concept multimodally (see Figure 3-2 for seating arrangement). In the data, spread out on the table are the designer's hand drawings for a dance play. Elevation A and B (see a collage of design drawings in figure 3.1) show design proposals for a mural wall, which will be made up of several scene panels on the stage. It is an upright structure of wood and would be painted on and laminated with canvas. The mural wall represents the façade of an imaginary building, called the "city." There are several arch-shaped and rectangular-shaped areas, called "doors" by participants.

From my observations, in design activity, no object appears to the participants as it is in reality. Participants use their imaginations to draw, create, and talk. When they talk about the props or set pieces, they give these objects realistic names such as "doors," "windows" or "the castle." Also, these doors would be carved out of the wood, laminated, and patched with rear projection screens. In this way, the doors become front projection surfaces which allow moving pictures or animation pictures to be projected on them. Behind the upright, mural wall is a three-dimensional construction called "the castle" (see projection design drawings C and D in Figure 3-1). The design drawing is the apparatus of representation. In the theater production meeting, the deskspace where all the drawings are put constitutes "interactional space" (Kendon, 1990). It is the space wherein people initiate and make a design proposal. In an earlier part of the first conversational fragment, the team has communicated the design of the mural wall as shown in Elevations A and B. They have decided to adopt the design as shown in Elevation A.

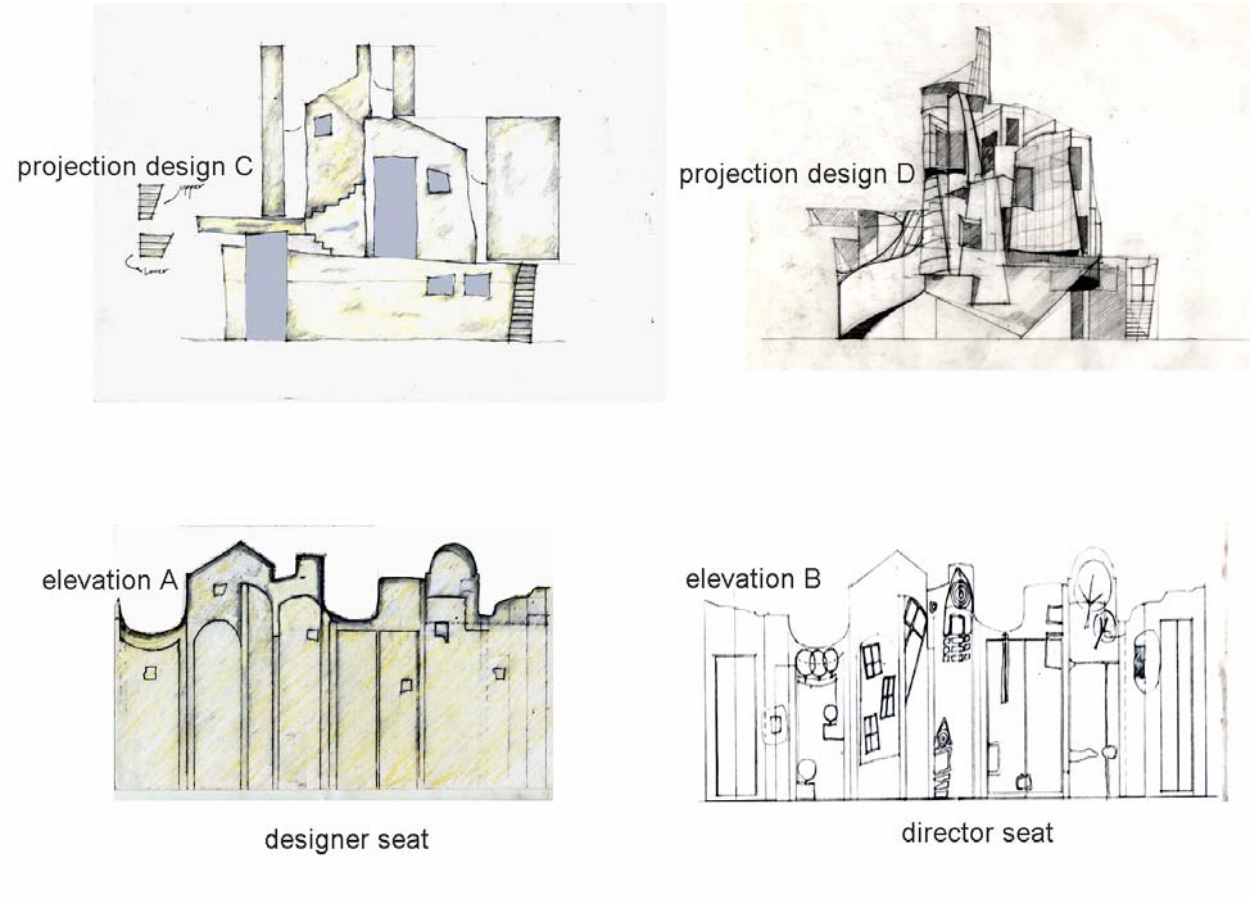

Figure 3-1 A collage of graphic representations and visualization on the studio table

Then participants move to the discussion of Elevation A and the director proposes that the doors on the mural wall can be transformed into irregular forms-more like things that can be imagined by the audience as unreal objects. As she utters, “if this door frame is not intact” (line 1), she leans toward the elevation drawing. In the watchful eye of the designer, the director points on the elevation drawing and her index finger traces the arch shape drawn on the paper (see the arch door in the middle of Elevation A shown in Figure 3-3) In the next utterances in lines 2 and 3, the director explains her design ideas and continues tracing movement along the arch door. In line 4, the director envisions that “in the middle there would be an opaque shape.” As the director utters the words, “opaque shape,” she moves her pointing finger to the middle of the arch shape and starts

to draw an imaginary jag-shaped contour (see the dotted lines in Figure 3-3). In the next turn, the director continues by saying, “that can break up this simple line” (line 6). As the director utters, “this simple line,” she moves her hand and points and traces the arch door again. The director therefore uses both the perceptual and representational resources to locate the door as a problem area and to inscribe an imagined, altered space (i.e. the opaque shape) on a highly schematic plane.

[Excerpt: The Opaque Shape]

01	Director:	假設這個門框就 不是完整的 if this door frame is not intact
02		而是 it is
03		比如說 for example
04		中 間 有 一 塊 *opaque*的形狀 in the middle there would be an *opaque* shape

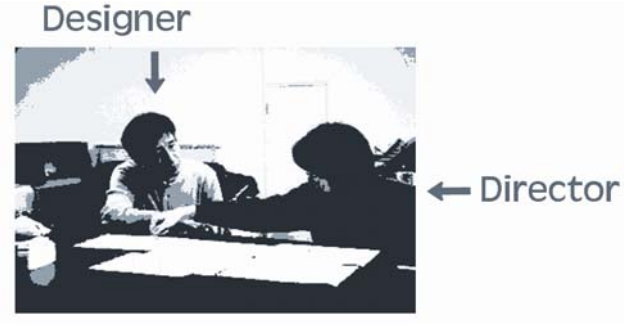

Figure 3-2

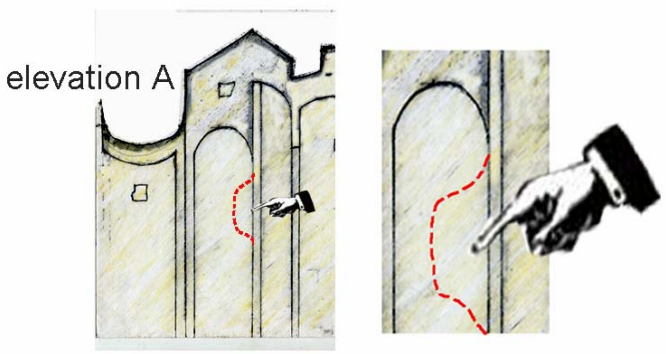

Figure 3-3

05 Designer: Mm

06 Director: 它就break up這個單純的縫

that can *break up* this simple line

In the subsequent design process, the designer takes up the director's design idea and develops it. First, he shows his awareness of the new design idea (line 7). Then the designer uses a hypothetical and says, "if you want to do this" (line 8). As he verbalizes the deictic word, "this," he points at the middle of the arch door (Figure 3-4). This pointing gesture then instantiates the problem area that was indicated by the director. It is also embedded in the syntactic organization of the hypothetical sentence which projects a second clause. In this way, this pointing gesture concretely foregrounds the door as a practical working area to be assessed and examined in his impending talk. In the following talk, the designer continues his talk and says, "this door would revolve" (line 9). When the designer says, "this door," he lifts up his arm and holds his palm facing the interlocutor. This hand shape is producing a physical description of the door. As the speech unfolds, the subsequent hand movement is able to produce three-dimensional and

tectonic characters of the prop. When the designer utters the word, “revolve,” he quickly moves his palm in a semicircular motion as a consequence of wrist rotation (see Figures 3-5; 3-6; 3-7). This gesture consists of sequences of arm lift-up and peaks as the outward palm rotates in order to create a concrete image[7]of the revolving door. In the next turn, the designer continues his explanatory remarks. As he says, “to see it clean” (line 10), the back of the designer’s hand is being held up in front of the interactant momentarily throughout this utterance (see Figure 3-8)

07 Designer: okay我懂你的意思
okay I see what you mean

08 現在假設你是這樣做
if you want to do this

Figure 3-4

09 這個門會轉過來
this door would revolve

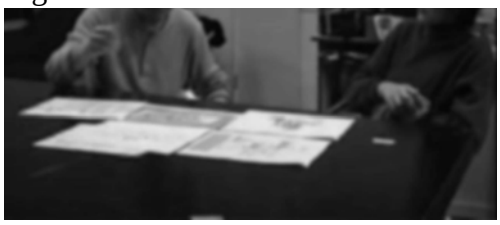

Figure 3-5

7 This kind of performative and communicative gesture is termed by Kendon (1980) as a “gesture phrase.” He defines a gesture phrase as a “nucleus of movement with definite form and enhanced dynamic qualities” (Kendon, 1998, p. 208). It typically includes hand movements of preparation, holds and stroke.

Figure 3-6

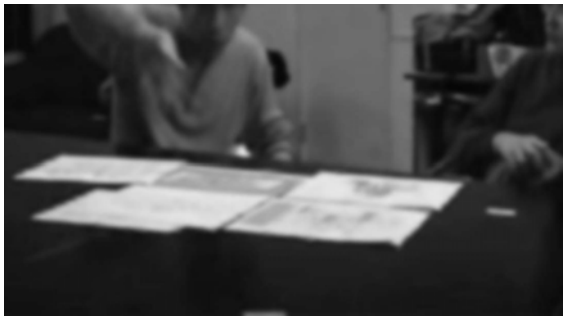

Figure 3-7

10 它要看得很乾淨
to see it clean

Figure 3-8

11 Director: hmm 門的背面
hmm the back of the door

12 Designer: 對
right

The prop, the door, is no longer a line composition drawn on a two-dimensional plane. Unfolding seamlessly with verbal language, the designer's gestural actions constitute a meaningful sequence in which the rotating movement and, more importantly, the front and back of the door can be envisioned. The set designer is able to cultivate the faculty of imagining through both verbal and nonverbal processes. As language depicts,

actions and embodiments can be understood as concurrent, three-dimensional formations of the material object of design activity. The prop, the revolving door, is physically modeled through the speaker's handshapes and movements, providing the co-participant with communicative resources through which a range of relevant design features can be constituted.

As seen in the following talk, the director takes a turn, formulating the information she has received from the gestural conduct. She says, "hmm the back of the door" (line 11). Integral to the director's verbal formulation is the designer's prior turn of explanation: "to see it clean" (line 10). As said, the back of the designer's hand is being held in front of the director for this entire spoken phrase. The handshape can be described as an act of indexing, that is, an "embodied reference" (Hindmarsh & Heath, 2000) of the ambiguous referent, "it." As said, the designer's arm was lifted with palm facing outward, after the gesture rotates and creates concrete image of the resolving, the back of the hand is being held momentarily in the eye line of the interlocutor. This handshape temporarily implicates another three-dimensional surface of the prop, that is, the back of the door. By disambiguating the deictic word, "it," the handshape establishes an anaphoric reference (see McNeill, 1992) and contributes the semantics in the stream of discourse. The imagery created through gesture-in-use supplements the verbal description of the thing which is enacted by the hand anaphorically. In design discussion, the gestural reference in the form of anaphoric linkage can enact the thing's phenomenon—an image that the recipient can see and interpret through situated acts of seeing and saying.

Indeed, the director formulates a critical point; she sees and articulates that what the designer's hand gesture displays to her is a new problem area of ongoing design work: the back area of the prop. The director in fact intently follows the actions of the designer's hand as it works within the highly complicated organization of several

semiotic recourses (Goodwin, 2000, 2003). Specifically, the word, "clean," connotes a particular way of knowing as the handshape simultaneously supplements and formulates how what is to be seen as "clean" in terms of specific stagecraft knowledge. To be more precise, on the stage, the wall or the scene panel is often built from a "flat," and this is what theater people usually think about when they mention scenery. A flat is a frame of timber covered with tightly stretched canvas which can be painted to represent a scene. It is flat in the sense that only one side of the wood panel facing the audience is treated and painted. Behind the front of the flat is usually the wood truss construction that provides the panel with structural support. The mural wall and the door being discussed by our participants would be built from a flat. As a result, in our case, if the door would revolve, the back area would be revealed and must also be treated.

To make sense of this simple interaction, participants jointly find their way around in seeing features of an object that is not manually available. Culturally available senses of what counts as "clean" as it is used to depict the feature of a material object vary from context to context[8]. The professional participants manage to synthesize features and current design problems from the stagecraft knowledge of scenery building in situated acts of seeing and talking. In the ensuing talk, the designer shows his agreement and continues to propose a technical solution concerning the new design task (lines 13-20). Again, to structure the solution domain vividly, the designer's lengthy explanatory sequence is reinforced gesturally. For instance, as he utters the word, "laminated," in line 13, he presses his palms together to create a laminating image (see Figure 3-9).

8 For example, Knorr-Cetina (1992) observes that biologists often have to make an educated guess as to what procedure is best in a given situation, and so the sense of what counts as "clean" depends heavily on an individual's experience. Such senses should be regarded as "prognostic knowledge which individuals must somehow synthesize from features of their previous experience, and which remains implicit, embodied, and encapsulated within the person" (p. 121).

13 Designer: 所以門背面要
laminated
so the back of
the door needs
to be laminated

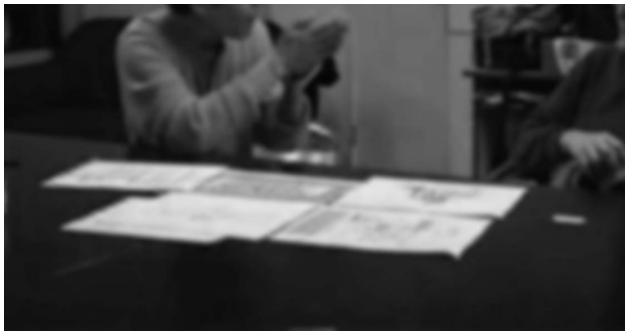

Figure 3-9

14 要做雙層結構
with a double
layer
construction

15 填厚::
to thicken::

Figure 3-10

16 材料產生的不
一樣
the difference
caused by the
materials

17 所以兩邊表面上
看起來一樣
so the front and
back of the
door would
look the same

18 中間夾了什麼
東西
but there's
something
inside

19 所以它中間變
opaque
so the middle

part would
become opaque

20 24:40 局部
part of it

Figure 3-11

Figure 3-12

21 Director: hh. 對
hh. right

Similarly, in line 16, accompanying his verbal turn, “to thicken,” the designer places his two hands open, embodying the material substrate which helps the co-participant to envision the object as a concrete entity. In support of technological ideas, the designer’s use of two hand gestures also acquires dimensionality instrumental in simulating physical construction. Recall that the one-hand lifting gesture (from Figures 3-5 to 3-8) may connote the two-dimensional quality of the prop as being flat in that the handshapes can be approximated by planar facets of the palm and the back of the hand. Now the designer reorganizes his use of hands, negotiating materiality and creating insight into the process of making and building the prop as a three-dimensional entity to be enclosed by “a double layer construction” and to be “thickened.”

A similar gesture which denotes the material substrate is invoked again in line 18 as the designer explains, “but there’s something inside.” In line 19, the speaker uses the conjunctive word, “so,” to summarize and recap his speech. He reconfigures the design idea favored by the director by saying, “so the middle part would become opaque” (line 19). The designer continues and says, “part of it” (line 20). The verbal turn is coordinated with a simultaneous use of the gesturing hand (see Figures 3-11 & 3-12). As the speech unfolds, the designer’s index finger draws a jag shape in the interactive space between him and the director. This handshape and movement resemble the jag shape that the director drew and inscribed physically on the elevation. This bodily act not only references to the visual configuration of this simple verbal phrase, “part of it,” but also demonstrates the “recipient designed”[9] nature of human action (Koschmann & LeBaron, 2002). While the body can perform the material form of the prop, it also builds up structure of communicative relationships as the speaker re-uses the other’s gestural act to enact her design proposal. The designer’s explanatory remarks and reformulation of the director’s design idea are followed by the director’s agreement (line 21).

Now we turn to the second conversational fragment. The context is that participants read the design drawing, Elevation A, and discuss lighting arrangements on the doors on the mural wall. Prior to the designer’s first utterance in this transcript is a dialogue in which people discuss the design possibility of combining lighting and projecting elements on these areas. They start to call these door-like objects as “broken holes” or “black holes” because without light, these areas become a dark void on the stage. In line 1, the designer begins to explain his design idea and quickly points at each door drawn on the elevation as he says, “these broken holes.” In mise-en-scène practice, noun phrases

[9] The authors argue that repeating the other’s gesture obviously manifests the knowledge of whom the other participants are and what they have said and displays the reflexive phenomenon of being “seen to hear and see.”

such as “these broken holes” being physically instantiated are constitutive terms to be further elaborated and assessed as a practical work domain in the following negotiating and problem-solving sequence.

Then the designer continues to explain, “with light” (line 2). Moving from the deskspace to the gestural space in front of his body, the designer raises his head and hand from the elevation drawing and looks at some remote place. In the next utterance, he shifts the deictic pronoun and seemingly positions the interlocutor as the spectator of the imagined scene. He says, “you would see some lit loci” (line 3). In Haviland’s notion, the speaker can “transpose” the interlocutor to a different time/space through a marked shift in the deictic component and spatial orientation. In our data, the transposition produces corresponding deixis and simultaneously shifts the speaker’s spatial coordinate in current communicative situation. As the designer utters the words, “lit loci,” he opens his palm and points at three different places in the gestural space in front of his body (see Figure 3-13). This moment shows that a design situation is a substantively communicative process. The design description can be organized in an alternative gesturing space available to the speaker as a backdrop to invent a sight which somehow coincides with the physical world of theater as the audience has to gaze up in the gesturing of “lit loci.”

[Excerpt: Black Holes]

01 Designer: these broken holes

02 有光

with light

03 妳看到一些光的位置

you would see some lit loci

Figure 3-13

In the following talk, the designer continues explaining that when the light is not given, these broken holes would become dark or they can be projected with moving pictures (lines 4-6). After the designer ends his remarks by an explicit invitation of other participants' involvement (line 7), the director takes a turn and expresses her opinions about the size of the design object, which she simply terms as "that piece of thing" (line11). In a short pause (line 12), the designer takes a turn and repeats some words of the director's prior turn. He says, "that piece-that piece of thing" (line 13). At the same time, he raises his hand and repeats the same gesture of "lit loci" used in his prior talk in line 3 (see Figure 3-14). This handshape which physically connects the director's words and the speaker's verbal repetition (i.e. that piece of thing) with an earlier design idea becomes an embodied carrier of minimally denotative language forms. In other words, the language-use is simple, but the gesture-use can recontextualize the visual phenomenon and design forms suggested throughout the mise-en-scène conversation and across the turn boundaries.

04 不見的時候

as light disappears

05 影像可以很清楚的被投影

the image can either be clearly

projected

06 或是有幾個黑洞

or there would be several black holes

07 這是一個我們要討論決定的事情

this is something we need to discuss and decide

08 Director: 其實

in fact

09 以你畫的那個尺寸

in terms of the size you drew

10 對我來講

for me

11 例如那塊-都是ok的

for example that piece- that's ok

12 (3.0)

13 Designer: 那塊-那塊東西

that piece-that piece of thing

Figure 3-14

In the next turn, the designer continues to describe that the designed object “would suddenly disappear” (line 14). Here, the designer’s fingers are brought and held together to create a disappearing image (see Figure 3-15). Meanwhile, when the designer utters the word, “disappear,” he also shifts his eye gaze away from the interlocutor to the front elevation. Notice that in the next turn, the designer stops his talk but momentarily holds his eye gaze on the right side of the drawing, on one of the door-like shapes. During this three seconds’ pause, the designer has been engaging in a relatively marked gaze on the door located at the right side of the architectural drawing. The director also shifts her gaze and focuses on the area being stared by the designer (see Figure 3-16). After this short pause, the designer looks back to the director and responds to her concern about the size (line 16). In the next turn, partially overlapping the designer’s speech, the director again asserts and says, “that’s ok” (line 17). The director continues her utterances, but accounts for a new phenomenon that relates the spectator’s gaze and the creation of a stage object (lines 18-20).

14 Designer: 突然不見了

would suddenly disappear

Figure 3-15

15 (3.0)

Figure 3-16

16 這些尺寸[我都還沒訂喔

these sizes [I haven't specified

17 Director: [那都是ok的

[that's ok

18 Director: 因爲

because

19 對觀眾從某些角度

to the audience from certain angle

Figure 3-17

20 我們的影像在螢幕上就會有點斜

our image on the screen would be a little oblique

Design talk is both reflexive and emergent—a style that allows ideas to be occasioned and negotiable. The issue regarding the material size is raised but the participants enter into another discussion of the viewing position, which emerges as a

new domain of professional scrutiny. As the director says, “to the audience from certain angle” (line 19), she starts to change her bodily posture, stretching her upper body and arm toward the design drawing. As she utters, “certain angle,” her index finger is placed on the corner of the studio table and points toward the left side of the design drawing (see Figure 3-17). The pointing gesture instantiates and tacitly embodies “certain angle.” Here, the placement of the hand distinguishes two symbolic spaces. The angle of the spectator’s gaze is created as the director places her hand off the drawing—a gesturing space used by the speaker to indicate the audience’s angle of view in relation to the onstage scene represented by the elevation drawing. Then the director articulates, “our image on the screen would be a little oblique” (line 20).

21 Designer: Mmm

22 Director: 所以我會認爲這個東西

so I would consider this thing=

23 Designer: 就算黑了一塊

=even if it is blackened out

24 Director: 也無所謂

that’s fine

Sight line problems often occur on two sides of the stage. The audience seated farthest from the center of the stage area often gets a peripheral view of the scene effect on two sides of the stage. This problem area is brought into prominence as the designer instantiates visual orientation to a distinct location on the scenograph. The eye gaze, like other meaningful bodily acts and pointing gestures as shown in our prior analyses, is able to parse the complex visual field of scenograph. The designer’s eye gaze and the director’s monitor of such a gazing activity are made mutually accountable in the

ongoing mise-en-scène conversation in which the audience's sight line issue is nonverbally "occasioned" (Jefferson, 1978) and physically embodied.

In the next turn, the designer nods his head and produces a minimum response token (line 21). Then the director continues with conclusive remarks and says, "so I would consider this thing=" (line 22). Immediately following the director's remark is a direct latch from the designer who produces the continuation for the director and co-formulates the design idea. He says, "=even if it is blackened out" (line 25). The words, "blackened out," are performed with the same disappearing gesture in his prior speech in line 14 (see Figure 3-15). The same gesture is repeated, shaping the organization of the ongoing turn and the linguistic practice of co-formulating. As said, design language is simple but gesture forms material abstraction that spans the entire communicative process. The recurrent use of a specific gesture can invoke the knowledge and meanings that are built in a series of physical ways of configuring the prop to be design.

The syntactical organization of the "even if" conditional clause projects the second clause, which is collaboratively completed by the director who produces the next turn by saying, "that's fine" (line 24). The conversation device of collaborative completions clearly demonstrates the state of mutual alignments between the conversationalists (Nofsinger, 1991). It also shows the designer's and director's mutual agreement on the set design and on how to overcome a specific mise-en-scène problem. By surrounding the stage on each side with "black holes" and suffusing the upstage volume with a substantial portion of void, the director and the designer create a visually homogenous scene for all to see.

To summarize the findings of this section, we find that to understand ways in which people talk and interact with visual representations in the mise-en-scène situation, we should take account of the integrated organism of language and body immersed in the

interactive and material environment. Pointing, tracing, and drawing acts use the deskspace and the front elevation of stage scenery as a backdrop for the physical place of scenographic interest and problem instantiation. These gestures are able to segregate and parse the complex, semiotic field of the scenograph; they are used to instantiate a problem area within which scenographic imagination is inscribed and a new design proposal or "design move" (Schön, 1983) is initiated. Design ideas are physically modeled through a series of bodily acts and "iconic gestures." McNeill (1985) has described iconic gestures as "typically large complex movements that are performed relatively slowly and carefully in the central gesture space" (p. 391).

Meanwhile, participants move from the deskspace to the interactive space or other gesturing space available to perform ideas and design object and the mise-en-scène becomes a matter of using the body to physically mold props that do not yet exist through hands. These bodily performances enable participants to formulate a design problem and find aspects of creativity in design solutions and these solutions are related to the way in which a mise-en-scène problem is formulated verbally, visibly, and kinesthetically. Such metonymic procedure of design is collaborative and creative and is derived from the concrete, material problems (e.g., flat and sight problems) that theater poses any practitioner.

Second, the interactive space between the set designer and the director provides a setting for the constitution of perceptually shared objects. The props become more tangible, more a thing of immediate perception and less one of "reading" or inscribing among the symbolic lines and points over the graphic representation. Observing graphic designers' talk in their studio, Fleming (1998) describes that design talk is characterized by the relative sparseness of the language. In many instances, designers use words of indexing (e.g., "this is blue"). Van der Lugt (2000) also observes that gesture forms "the

shared visual context and can be used to make relative references, for instance: ‘let's combine this with that’, rather than to describe the whole idea when referring to it” (p. 506). In our data, gesture is very often anaphorical in the sense that it always points to something else. Once a material gesture is created and invoked, its iconicity makes easy assembly for mise-en-scène activity as a propitious meaning building practice. We have seen that by bringing together physical instantiation, bodily movements, and imagination, participants are able to “see” props that do not yet exist, at the same time, through their embodied and laborious performance of the props, build and communicate scenographic imagination.

Figuration

In architectural drawings, the human figure is often portrayed to indicate scale and depth and to convey the effects of size in architectural drawings (Robbins, 1997). Anderson (2002) argues that the human figure is indicative of scale, depth, and sizes of building but how the envisioned architecture might be used and experienced by human inhabitants is often overlooked in the process of figuration in most architectural drawings. He also points out:

> In most contemporary architectural drawings, human figures help to provide simple and clear indications of scale or a proper sense of depth. These scale figures need not be merely metric, however. They can also help to project some of the immeasurable qualities of architecture. If they are well conceived and rendered, human figures in architectural drawings can help to show how projected buildings might be perceived and inhabited. They can also be used to understand how architecture can be shaped to accommodate human experiences and actions. (Anderson, 2002, p. 238)

Ideally, sketches of human figures in architectural drawings can demonstrate human actions and experiences possible in a particular space, creating insights for the development of appropriate architectural details such as projected patterns of occupation, use, human movement, anticipated lines of sight, points of physical contact with the building and so on (Anderson, 2002). Artaud (1958) defines the "scenography" as being sculpturally real—as being a dynamic relationship between the building object, the landscape, and the moving body (p. 41). However, human figures are not a necessary component in many architectural and design drawings. In this section, we show that embodied actions can help to express the dancer's physical contact with the envisioned props and the projected space.

The first conversational excerpt illustrates the way in which participants use hand gestures to establish points of physical contact with the set design and to project forms of interaction between set design space and acting (in this case, the choreography). In this fragment, participants discuss the lighting design of a "castle," which is a three-dimensional wood construction on the stage. The director suggests using sidelight to define the space and reveal the structural elements of the castle (lines 1 and 2). The designer displays his uncertainty and explains that the castle is not a "void thing" that can simply be filled by lighting elements (lines 3 and 4). Then he goes on to explain the scenographic content by considering the presence of the human body and movement on the stage. As he utters, "the *dancer* would be there" (line 5), he points at a specific place on the castle on the projection design drawing (see Figure 3-18). Then he goes on to say, "when the *dancer* dances" (line 6). As the designer utters the word, "dances," there is slight touching on the paper and there are encircling and swirling motions, as if the handshapes and movements are mimicking the choreography, a slow waltz (see the circles with arrowed head in Figure 3-19). After the designer performs the choreography,

he explains the scene and says, “lighting conditions would become more complicated” (line 7). The director first responds with an agreement token (line 8), but then she voices a different opinion. She says, “but the *dancer* won’t stay there long” (line 9). When uttering the words, “stay there,” the director also points at the same locale being pointed toward by the designer. The designer takes a turn in which he shows his disagreement, elaborating on the mise-en-scène problem: “even one second can make difference” (line 10).

[Excerpt: the Dancer]

01	Director:	當側面光打進來時 when the sidelight comes in
02		這些結構就會變很清楚 these structures would become clear
03	Designer:	沒有 not really
04		因爲這些結構不是一個空的東西 because these structures are not a void thing

05 dancer會再上頭

the *dancer* would be there

Figure 3-18

06 當dancer在跳舞

when the *dancer* dances

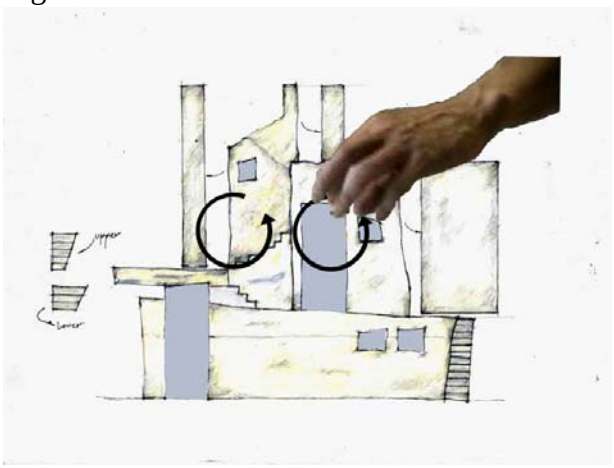

Figure 3-19

07 光線情況就比較複雜

lighting conditions would become more complicated

08 Director: 對

right

09 但dancer在上面的時間不多

but the *dancer* won't

stay there long

10 Designer: 可是一刹那就不同了

but even one second

can make difference

This short exchange of design ideas between the designer and the director demonstrates how participants make sense of the design situation together in embodied practice of figuration. The designer's pointing gesture establishes the point of physical contact between the dancer and the set piece, the castle. The space would be occupied by the dancer and this information becomes indispensable in communicating the dancer's physical locale in relation to the castle in the ensuing discussion in which the director points again at the same place. Moreover, the adequate sense of how the human body interacts with the envisaged lighting phenomenon is assembled in and through the dexterous, expressive use of hand gestures. The swirling handshapes and movements encompass the dancer's locomotion movement—a movement that carries the human body from one place to another through space. Because dancing is all about movement of the body and the moving body needs to be lit in a way different from a prop or a static set construction. The designer's hand motions create a dynamic, physical dimension of choreography and lighting design. Gesture becomes an improvisation, figuration technique immediately available to the set designer in his practical explanation of illuminating the moving body and the stage space.

The context prior to the instance to be analyzed includes a conversation in which the design team proposes to project moving pictures on the stage panels on the mural wall. Combining lighting and projecting techniques, this new design idea makes the stage a creative playground where the imagined dancer will interact with moving images and pictures, which are composed of urban and street scenes. In this way, the production team

does not need to build concrete city scenery and the dancer would still look like performing in a city-like place. In lines 1 and 2, the director proposes her idea and assumes from the perspective of some animate protagonist acting and performing. The director first uses an indefinite third-person pronoun, “one person” (line 1) and then shifts to another gender-neutral pronoun (line 2). The Chinese third-person pronoun, “他,” used by the speaker in line 2 can mean he or she. In my translation, I translate this third-person pronoun into “she” given the context that this production only involves female dancers. In line 2, the director says, “she would walk across *panels*.” The words, “walk across *panels*,” are accompanied by a postural change. The director leans forward and her index finger slides laterally across the mural wall on Elevation A (see Figures 3-20 & 3-21). Then designer responds with a slight head nodding and recognizes this idea linguistically. Meanwhile, he formulates the envisioned scene figuratively and continues to say, “so she would show up between *panels* on the gap” (line 3). Here the designer co-constructs the narrative’s taleworld.

[Excerpt: Shadow]

01 Director: 有一個人

there would be one person

02 她 可 以 走 *panels*之間

she would walk across *panels*

Figure 3-20

Figure 3-21

03 Designer: 所以她是在panels(.)縫當中出現

so she would show up between *panels* (.)on the gap

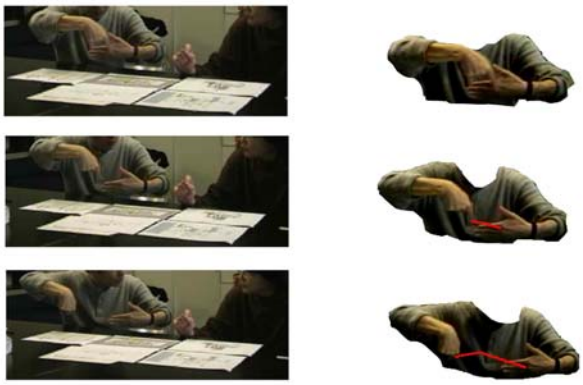

Figure 3-22

We call this story-like construct a narrative or story in a loose sense. Most narrative research in language and social interaction adopts a narrow version of what constitutes a narrative, based on Labov's model which considers the story as a representation of the experience, a transparent mirror. A story can be projective and still uses similar discursive structuring of the plot. Crites (1986) discusses imaginary story as being projective:

> A story that is projective rather than recollective is properly more like a loose scenario, without a script, on which a group of actors improvises, more like a free, unchoreographed dance than like the New York City Ballet, more like a piece of improvisatory jazz than something *durchkomponiert*. Since it proceeds from the present, it may begin with a certain situation and a few well-define characters, or a certain harmonic structure and agreement about the key signature, but only as a point of departure, the launching pad for the great leap into the unknown. (p. 164)

In mise-en-scène talk, imaginary events are told across story-like sequences. Participants collaborate in constructing a scenario without a script and such a scenario is based on the vividness of dramatic events in themselves. Now we turn to our data. As the designer utters the phrase, "*panels* (.) on the gap" in line 3, he extends his hands outward and holds them apart. His handshapes seem to mimic the panels and enclose a space, a performing area, between his two palms. When saying the adverb phrase, "on the gap," the speaker holds up his left hand in the same position and faces his right hand palm down with index finger pointing downward and quickly tapping sideways. The index finger taps and loops out a "L" shape. Figure 3-22 shows the gestural sequence and the red line displays the invisible L shape drew by the speaker. Notice that the scene panels used on the stage are hanging panels such that they are rigged and suspended from the overhead battens. From a distance, the mural wall made up by the panels would look like a flat surface to the audience. However, each panel is actually hanged on a different hanging batten. Some panels are hanged in the front rows and some in the back rows and in this way, certain panels can then be "flown" in and out for particular scenes as needed. Therefore there is a gap between each panel and this gap is bodily enclosed by the designer's hands. If the dancer moves from one panel to the other, she would actually move in a L-shaped course. The L-shaped hand movement not only creates the

architectural detail of the stage space but also pantomimes a more accurate trajectory of the dancer's moving body.

So far the narrative that the director initiates is constituted and reconstituted through the gesture's reformulation of the scenographic dimension of the moving body and props. In the following talk, the director not only responds positively but also reformulates the narrated and envisioned theatrical event. She edits the story plot by saying, "she would wander along the gap" (line 5). Recall that the director uses the generic motion verb, "walk," in her initial narrative. Now she reconstructs the configuration of the heroine's performative act by using a specific verb, "穿梭." Literally, the first syllable, "穿," describes the action of passing through something in an irregular course. The second syllable, "梭," describes the image of fast movement. Here, I translate this word into the English word, "wander," with an implication of an irregular course of moving.

04 Director: 對

right

05 她會在縫中間穿梭

she would wander along the gap

In terms of lexical choices and workplace interaction, Ochs, Jacoby and Gonzales (1994) investigate scientists' lab practice wherein the scientists ground language about abstract phenomena and imaginary physical entities in immediate bodily experience and narrative construction. Drawing on linguistic resources (e.g., grammar and lexicon) and performing through the dynamics of collaborative authorship and embodied actions, the physicists engage their bodies in a way that identify with highly intertextual and symbolic narrative spaces provided by graphic drawings. They verbally, gesturally construct a

graphic journey on the graphs. These spatial and movement-like stories are described by Ochs et al. (1994) as “sensori-motor” narratives through which the physicists employ a range of linguistic resources and imbue static, two-dimensional displays with dynamism. A typical grammatical construction includes motion/change-of-state verbs such as "come," "go," and "cross over." The physicists also enact gestural journeys within the frame of a graphic display. For instance, they may dramatize the process of an increase or decrease in temperature by moving a finger along an axis representing temperature increments. Ochs et al. (1994) argue that the combination of dynamic gesture and grammar is a ubiquitous practice in the interactions of the physicists. The authors write:

> In the physics laboratory, members are trying to understand physical worlds that are not directly accessible by any of their perceptual abilities. To bridge this gap, it seems, they take embodied interpretive journeys across and through see-able, touchable two-dimensional artefacts that conventionally symbolize those worlds. While in some cases the members do not actually touch a representation, they may journey to some part of it by gesturing along a delineated trajectory or toward a particular point, even at some distance (e.g., while seated at a table). In this sense, their sensori-motor gesturing is a means not only of representing (possible) worlds but also of imagining or vicariously experiencing them.
>
> (Ochs et al., 1994, p. 163)

Based on the sensori-motor narrative approach, key concepts in the lexicon of motion verbs are found in how the set designer and director co-narrate the mise-en-scène and how they inscribe figures in an imaginary space. An animate subject, “he” or “she,” is recruited in the co-construction of a fictive journey through both the pictorial space of the visual representation and the interactive space of face-to-face communication. Participants experience with and collaborate in narrating possible future forms of the

dramatic activity by moving between future-oriented envisioning and subsequent reformulation of design features and decision-making. In the following talk, the mise-en-scène narrative is continued and richly illustrated by both visual images and spatial expressions from lines 7-10. After a short pause, the designer responds to the story and assesses the imagined figure's location (lines 9 and 10).

06 Director: 可是慢慢的

but slowly

07 她會在後面把一片一片的門打開

she would open the doors from behind

08 (4.0)

09 Designer: 我以爲那個人

I thought that person

10 大部份時候是在panels的前面

would stay in front of *panels* most of the time

The director responds to the set designer's assessment. Then she launches into a longer narrative (lines 11-20). The director articulates that in her imagination, the dancer would be lit from behind the panels. The dancer's shadow would be enlarged in the front, projection surface. At meantime, the dancer's shadow would overlay the projected image of some city scene on the projection surface, creating an artistic illusion (lines 11-20). The taleworld is micro-physical and vividly elaborated. Especially the director describes that the dancer would be lit and her shadow would be enlarged (lines 15-17). In line 16, when uttering the word, "shadow," she extends her hand outward with an open palm and a curved index finger (see Figure 3-23). Then the director withdraws her hand from the interactive space, continuing the vivid narrative which depicts the spectacle of

performing and lighting from lines 17 to 19 during which we also observe a relatively impoverished use of hand gesture.

11	Director:	Hmm 大 部 份的時候是: Hmm most of the time yes:
12		但是(.)但是 but (.) but
13		想像當中 in my imagination
14		他如果是在 後頭的時候 if she's in the behind
15		有一個燈 there would be a light

16 使得她的
making her
shadow

Figure 3-23

17 變得很大
very large

18 走在前面
like she's walking in the front

19 在影像的城市當中
in the projected image of the city

20 Director: 即 使 是 temporarily 這樣的畫面 出現
even *temporarily* this kind of picture shows up

Figure 3-24

It is toward the end of the story that the director creates embodied conduct. In line 20, the director utters, “even *temporarily* this kind of picture shows up.” In the narrative coda, the director summarizes the kind of theatrical spectacle that gets built in her imaginary story as “this kind of picture.” This phrase is also accompanied by a similar hand gesture (see Figure 3-24) used to represent the image of the “shadow” in line 16. This gesture not just provides a deictic indication associated with the iconic image of the “shadow” performed in the previous telling. Rather, gesture is meat-narrative. McNeill (1992) has shown that the narrator’s use of “beat gesture” can signal movement between narrative levels. He points out that “the story was being described not in terms of a series of events in the world, but as an object with external contours” (McNeill, 1992, p. 196). The relation between narrative and gesture is not simply referential. Gesture portrays the world as a series of patterned events by virtue of narrative ordering.

The repetition of the same gesture forms practical imagination and guides participants’ perceptions of unfolding events as they move things and imagery along some narrative directions rather than others. The shadow gesture is organized around an imagined plot and, through the use of this same gesture. In this way, the narrator instructs

the recipients how to hear and "see" her story in the narrative closing, that is, the shadow as an ultimate spectacle. Also in this way, this repeated gesture is metanarrative, creating an active ensemble of the mimetic drama. With the unfolding plot, narrative functions as a mean of imaginative communication where the narrator complicates and envisions the whole apparatus of theatrical manifestations including human movement, light, projection, and scenery.

In the next turn, the designer assesses and formulates the director's story briefly, only highlighting certain features of her story. He says, "so a shadow would appear in the front" (line 21). The information which dramatizes the performative aspects (e.g., the locomotion of the dancer and the dancer's dramatic performance) in the director's story is mostly filtered through the lens of set design. The designer transforms the animate subject, "she," into an inanimate pronoun, "a shadow." He says, "so a shadow would appear in the front" (line 22). In his utterance, the dramatic performance is expressed through simple linguistic expressions. Storytelling is part of everyday institutional arrangements. On the one hand, narrative is necessarily a collaborative production (see Ochs et al, 1992), yet often institutionally informed. Gubrium and Holstein (1998) observe that in many institutional settings, "narrative control" can be exerted through various linguistic practices such as predesignated narrative topics, partially predetermined storylines, interruptions, and (re)formulations. They point out that narrative control can be as much a matter of forming an organization's protocol as it is "an artifact of the participants' interactional skills" (p. 153). The next turn is a conversational "space" wherein the designer exerts narrative control and treats the amount and type of "relevant" information included in the story.

21 Designer: 所以出現一個影子在前面

so a shadow would appear in the front

22 Director: 對

right

23 Designer: 對

right

On the other hand, as the director actively informs her interlocutor how to hear and see her story at points of narrative practice, the idea of creating a shadow on the stage is verbally and gesturally enacted and reenacted. The gesture poses an experiential and interpretive concern in the stream of discourse. Although orienting the narrative interaction to an inanimate design discussion, the set designer works up the visual concept visibly and discursively performed by the narrator, that is, the shadow as the spectacle. Then the director nods her head and evaluates the set designer's formulation positively. Following the director's positive evaluation, the set designer moves in this direction, offering another way of formulating and realizing the spectacle as been envisioned by the director.

Partially repeating what he had already said, the set designer affirms, "so there would be a shadow" (line 24). He goes on to build his idea by using the director's word in the end of her story and says, "a picture" (line 25). In the next turn, the designer reformulates the theater effects being envisioned throughout narrative communication. With an intonation emphasis, he articulates the word, "**washout**" (line 26). This word is accompanied by embodied act which mimics the director's handshapes of the "shadow" and "this kind of picture" (see Figure 3-25). Notice that the word, "washout," is a technical jargon, referring to a specific lighting technique which uses backlight as a counteract light against the front projection in order to create an emissive image or silhouette on the projection screen. This lexical choice not only provides a practical

solution but also cues to some stagecraft knowledge that exists within the theater community.

24 所以出現
一個影子
so there
would be a
shadow

25 局部的畫
面
a picture

26 ***washout***

Figure 3-25

27 Director: 對
right

In the post and assessment sequence of narrative communication, the set designer obviously engages in the linguistic and professional practice which is qualitatively different from the director's linguistic practice (i.e., the use of figurative language, the discursive structuring of story sequence, and the use of motion and performatory words). The set designer's constitution of turn shape (i.e., the assessment or reformulation), the use of an inanimate subject (i.e., a shadow or it), and the lexical choice (i.e., "washout")

are significant ways of fitting the creative account into a problem solving process. At the same time such a linguistic practice produces an asymmetry and "institutionality" of interaction (Drew & Heritage, 1992). By reformulating and objectifying the sensate domain of narrative, the set designer is able to propose a design solution out of the image structure and the figuration moment as well as to reshape the many worlds professional participants inhabit—one in the dramatic; the other in the technological. Still, gesturing is a means of communicating possible worlds. It creates a coherence of imagining or vicariously experiencing narrative and its embodied apprehension of scene. That is, as mentioned, when uttering the word, "washout," the designer repeats the director's gesture signifying the shadow and the kind of theatrical moment. In this way, this same gesture works through problems of understanding and comes to a consensus on matters of interpretation.

To summarize this part of analysis, we have seen how people draw on linguistic, visual, and kinesthetic modalities so that the dancer, the choreography, and the performances are envisioned and intertwined in relation to the projected space of diagrams and suchlike, to create a shared sense of figurative and "embodied presences" at work. One of the major elements that differentiates the practices of figuration from other mise-en-scène practices is the use of the figurative language and narrative. Participants move between different languages and communicative practices—from narrative communication to narrative control and professional language so as to communicate design possibilities and formulate a design decision. Also, through use of bodily conduct, participants render the imagined dancer and scene probable. As an integral part of mise-en-scène activity, the figure and scenography come into being together as modes of perceptions as participants sensuously engage in this cultural dimension of figuration,

which is supported by mime and gesture and the embodiment of physical presence in an imagined universe of the architectural drawings.

Dimensioning

In architectural drawings, dimensioning codes such as numerals, size of letters, inch marks are placed to represent units of measurement. Other dimensioning conventions are used to layout sectional units such as doors, windows, and partitions and their constructional details such as wall thickness or structural strength. Design drawings or preliminary drawings only include approximate dimensions of the overall size of the building and these dimensions are subject to adjustments and negotiation (Robbins, 1997). The existing research in sociological and ethnomethodological studies concerns the local, *in situ* practices by means of which visual representations, measuring devices of various kinds (e.g., the ruler, scale, and even handshape), and words are practically organized (Hall, Stevens & Torralba, 2002; Lynch, 1991;Roth & Bowen, 1999). From these studies, the way in which a thing or a phenomenon is measured is not done through some abstract or arithmetic operations. Rather, the sense of numbers and the formulation of quantifiable phenomena are accumulated as a result of participants' perceptual apparatus and interactional work with each other in a material environment.

In particular, Lynch (1991) examines measurement practices in everyday conversations in household kitchens, in a legal testimony, and in a research laboratory in the neurosciences. In the scientific laboratory, for example, adding an "adequate amount" of the chemical is discovered as a hands-on and interactional work as members negotiate the amount by using both non-quantitative formulations (e.g., a bunch) and numerical expressions. Lynch argues that there is no common method for mathematizing experience across these diverse settings and that, instead, researchers should pay attention to how

participants attune to a linguistic environment of practical measuring activities through which professional work is pursued and achieved.

Furthermore, workplace is characterized by various kinds of problems to be solved not only verbally, but also perceptually and materially as workers interact with physical objects and visual representations. Kleifgen and Frenz-Belkin (1997) offer a nice example of how two Vietnamese technicians, Tran and Du, examine a pick failure in a circuit board machine, which contains interconnected components including the circuit, monitor, robotic arm, and feeders. The machine has been programmed to pick and place four sockets on the board but the robotic arm fails to pick up the forth one. The workers orient each other to the feed pitch as the trouble source. Kleifgen and Frenz-Belkin describe that Du kneels down at the base of the machine and takes the end of the feeder tape in one hand. Meanwhile, he uses a ruler to measure the distance from the midpoint of one component to the midpoint of the next. This distance is the feed pitch: the tape is fed forward as soon as a component is picked, so that the next component becomes ready for the robotic arm. Then Tran leans over to watch Du's measurement of the tape and begins calculating. The following conversation is subsequently observed and analyzed by the authors:

11:15:10	Tran:	Hai.
		Two.
11:16:10	Du:	[()
		[Hai, ba ruoi.
	Tran:	
		Two, three and a half.
11:19:06		Hai muoi va hai muoi lam.
		Twenty and twenty-five.
11:25:14		Hai muoi bon.

Twenty-four.

11:27:22 Du: Tu cai mo nay toi cai mo nay. ((hand traces distance))

From this point to this point.

11:30:20 Tran: U.

Yeah.

The authors go on to describe that when Tran announces the measure, Du holds the ruler with one hand and with the other traces the distance between the midpoints of two components on the tape. From lines 11:15:10-11:25:14, the workers determine a series of numbers and arrive at twenty-four (line 11:25:14). This number is tied to Du's actions with the ruler and his announcement in line 11: 27:22 in which he says, "*From this point to this point*." Then Tran responds positively. These two utterances recognize these numbers being reckoned as representations of the task to be accomplished—determining the pitch or the distance from the midpoint of one component to the midpoint of the next. As the workers measure, they also draw on multimodalities—the audio, visual, and kinesthetic perceptions, to notice a measure of distance as the trouble source. The authors show that as these numbers require careful assessment, a precise measure calls for a series of counting sequence and actions that have as their result an inscription that, perhaps contests the workers' own perceptions, could engender problem-solving actions (pp. 168-175).

In everyday conversation, numbers and dimensions are not just operations in the head, but are practically constituted in terms of situated, communicative practices and perceptual structures with the use of tools and inscriptions in a work setting. In the following analysis, I show that talk and embodied actions supply the necessary measurements and furnish the disembodied pictorial space with dimensioning practices

that are demonstrable and accountable for engendering problem-solving actions. The first conversational fragment is simple; it shows how participants talk and measure with their hands being geometrically scaled to the appropriate size for measuring one dimension, that is, the thickness, of the prop to be manufactured.

[Excerpt: Faux Depth]

01 TD: 是多少厚度

what is the thickness

Figure 3-26

02 (2.0)

Figure 3-27

03 Designer: 它沒有很厚

it is not very thick

04 大概十公分

about ten centimeters

Figure 3-28

05 但如果你要厚的話

but if you want it thick

06 我可以設計一個假厚度

I can design a faux depth

Within this meeting talk, the set designer and the director look at the elevation drawing and discuss about the size of one of the doors on the scenery flat. The size of the door has not yet been specified on the design drawing. Then the technical director (hereafter referred to as TD), shown on the right side of the picture, takes a turn and raises his concern about the depth of one of the door. In line 1, he asks, "what is the thickness?" As he utters the word, "thickness," he raises his right hand with his thumb and index finger being elevated and extended as if they are measuring a small distance or length (see Figure 3-26). TD's question is followed by a nonverbal turn of "self-repair[10]" (or transition-space repair; see Schegloff et al., 1977) wherein he extends both of his arms and palms and visibly displays a longer distance or length (see Figure 3-27). Research working within the tradition of social interaction has shown that repair work, when directing at correcting errors and managing troubles in one's own speech production, is a play between language and physical movement. Goodwin (1981) first presents an extremely detailed analysis of the role of gaze avoidance in constructing a repair turn. Gilbert (1996) examines how the participant taps the PDA panel with the stylus and performs a tracing act in expectation of finding the right icon. He argues that such a gesture not merely searches for the right icon, but constitutes a "nonverbal repair-particle,

[10] Schegloff et al. (1977) define repair as "those practices by which parties to talk-in-interaction can address those troubles in speaking, hearing, and understanding the talk" (p. 362) There are two forms of repair work, including other-initiated repair and self-initiated repair. Self-initiated repair in transition space is immediately after a speaker has completed a turn and before the next speaker has started to speak.

a visually articulated ‘u:h’” or “a more elegant maneuver than any conceivable verbal analog” (Gilbert, 1996, p. 16).

In everyday conversation, self-repair is an embodied act. In our data, TD’s elaborate physical movement created by the positions of the arms in space is directed to revising his physical expression of sizing and dimensioning the “thickness.” TD’s self-repair work is a visible display. The co-participants gaze toward TD since he rarely speaks and voices his opinion throughout this meeting. The designer answers TD’s question, informing TD that “it is not very thick” (line 3). Then he brings forth a numerical measurement: “about ten centimeters” (line 4). As the designer utters in line 5, “ten centimeters,” his fingers physically cover an approximate distance (see Figure 3-28). The designer goes on to explain and frame a dimensioning issue, “but if you want it thick” (line 6). Then he formulates a solution, “I can design a faux depth” (line 7). These two utterances address and renew the relevance of TD’s embodied turn of self-repair whose tactile representation is taken as something accountable and, more interestingly, as a practically adequate way of constructing spatial dimension.

Agrest (1988) posits the human body as an analog instrument in the history of architecture. He argues that there is an analogical relationship between the body and architecture and such a “process of symbolization takes place by relating the body as a system of proportion to other systems of proportion” (p. 33). While TD creates an operationally simplified system of mensuration, he has to employ two members of the body to devise the length or extension that can be viewed as volumetric divisions in the physical world. That is, he has to establish the commensurate relationship of the finger to finger as well as the commensurate relationship of the hand (or the palm) to hand (palm) when they are used for calculating dimension. Obviously, in the construction of his turn of self-repair, TD can move his thumb and finger farther apart but the moving fingers

might be taken as being performing the residual trace of the original scaling act. If he simply raises his another hand with his right hand thumb and index finger remaining in the same configuration or with his right hand being withdrawn to its home position, the bodily parts cannot form a meaningfully scaled relationship and basic unit measurement, that is, from point to point or from surface to surface.

By extending both his arms and palms, TD clearly reorganizes his handshapes as a modular unit of proportioning in order to enframe a repairable phenomenon, which involves a physically instantiated relation of re-scaling small and large measurements. It is also the process of organization of talk and gesture, of bringing together the body's moving parts and their structural and denotative capacity for dimensioning, that the human body can symbolically suggest something of a visual metric for the local distribution of a measuring concern. Modifying his physical expressions from within the duration of the turn-transitional space, TD uses the sequencing structure of talk as a communicative resource that can serve to shape the course of the following talk. Both language and gesture are used as a constitutive feature of the design activity and become "procedurally consequential" (Schegloff, 1992) to talk at a workplace setting. Subsequently, the set designer also displays of his understanding of different design possibilities, applying that measure in TD's embodied turn of self-repair to his proposed design solution regarding a "faux depth" (line 6).

The communicative process of measurement that involves embodied work is also observed in the second conversational fragment. This conversational excerpt is part of the meeting talk in a theater production meeting for a Chinese opera. This production involves a different production team, including the director, Keming, and the set designer Jen from the SBL company. In the beginning of this meeting, the set designer explicates his design proposal with a ground plan which shows the stage layout and the set

arrangement. The background to the following talk is that participants sit around the table. The ground plan is a bird's eye view of the stage in which the arrangement of scene units are is specified. The meeting is initiated by a discussion of the stage layout. The director has a concern about the size of the forestage, that is, the part of the stage floor in front of the curtain line. The forestage is also known as the "apron."

In the first line, the director points toward the ground plan and asks, "what is the width" (line 1). Responding to the director's question, the set designer inserts a clarifying question, asking "you mean the apron" (line 2). The director supplements his answer with a general semantic category, "all" (line 3). In the next turn, the designer responds with "hmm" and repeats the word, "all" (line 4). Meanwhile, he leans forward and holds the scale against the ground plan at the two stage doors marked on the drawing (see Figure 3-29). Eco (1984) describes that a simple language is "a very primitive holophrastic language" (p. 174) that involves inferential movements and provides sets of instructions. The word, "all," not only explains but also projects measurements as the set designer determines the distance and takes the measure with the scale on the ground plan. At the same time, the director also attunes to the practical activity in pursuit of precision and explicitly directs the designer to measure "the stage width" (line 5).

Excerpt 3.3.2 [Stage Width 00:38]

01 Director: 那個寬度是多少
what is the width

02 Designer: 你說臺口
you mean the
apron

03 Director: 不是hh全部
no hh all

04 Designer: hmm全部[umm::

hmm all[umm::

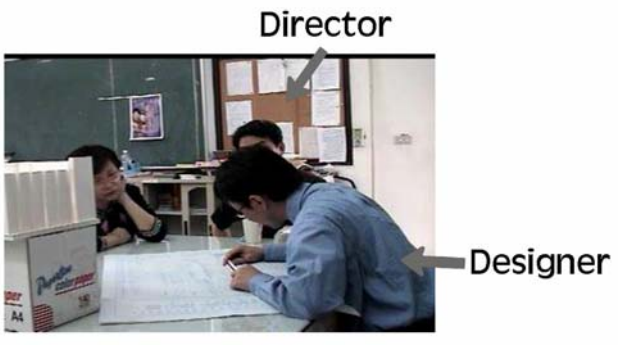

Figure 3-29

05 Director: [舞台寬

[the stage width

In the next turn, the designer raises his head and brings his gaze back to the director, reads out a precise measure: “ah nineteen meters” (line 6). The director repeats the number, indicating his alignment with the piece of information (line 7). Numbers require careful assessments in everyday workplace talk (Kleifgen & Frenz-Belkin, 1997). There is a pause during which participants focus their gaze on the ground plan and seemingly determine the meaning of the number. Then the set designer makes an assessment and says, “very wide” (line 9). This assessment is subsequently acknowledged by the director whose agreement overlaps the designer’s last syllable (line 10). The director’s acknowledgment provides a conversational environment within which the designer can continue framing and formulating a design problem in lines 11 and 12.

06 Designer: ah十九米

ah nineteen meters

07 Director: 十九米

nineteen meters

08 (3.0)

09 Designer: 非常寬[的

very wi[de

10 Director: [是

[right

11 Designer: 也就是說

in other words

12 它如果太[寬

if it is too [wide

Figure 3-30

Notice in line 12 when the designer uses a hypothetic sentence and says, “if it is too wide,” he raises both his hands high and extends his arms wide open, a gesture which can be considered relatively big in the flow of everyday talk and interaction (see Figure 3-30). This measuring gesture directs participants’ visual observation to the most abstract symbolic meaning the number may get anchored. Such meaning is embedded in both language use and the basic scales of bodily expression and disposition such as upright vs. tilted, straight vs. bent, rising vs. receding.

The hands rise laterally, held high and evenly spaced, and both create and contain an external boundary and a symbolic distance. In everyday life, we often use bent postural configurations or use one-hand gesture (e.g., the gesture of “hi” or “good-by” in many cultures). The handshapes we have examined are scaled to the body’s symmetrical and structural capacity to form a perceptually organized totality of the expressive pattern—

one that expresses a suggested proportion of width in corporeal terms. Furthermore, gestures need not be merely metric; they can also help to project some of the immeasurable, perceptual qualities of a building or a physical object. Pérez-Gómez (1983) proclaims that "[p]erception is our primary form of knowing and does not exist apart from the a priori of the body's structure and its engagement in the world" (p. 3). For long, the issues surrounding the study of gesture as it appears in the literature of anthropology and linguistics (see Kendon, 2000) support the notion that gestures are cultural, rather than biological or anatomical. There are countless instances that show the meaning of gestures, postures, and even facial expressions is specific within a given culture. Here I argue that gesture is both cultural and biological. As Pérez-Gómez (1983) articulates, "[t]he body has a dimension. Through motion it polarizes external reality and becomes our instrument of meaning; its experience is therefore 'geo-metrical'" (p. 3). Maxwell (1990) also demonstrates how gestures are both cultural and biological, or specifically, how the biological can sometimes take on cultural meaning in visual narratives of the deaf participants.

In our data, the body is capable of creating a perceptual measure resonant with the body's own. There is no human perception outside a framework of a body's structure and its meaningful anatomical assembly (see also Jarmon, 1996b); such perception is at the same time embedded in the *in situ* practice of being in the world- in the task in which participants mutually engage as well as in participants' acting on the material field (e.g., the ground plan, the ruler, and the seat arrangement) in particular ways. It is also through such an embodied conduct that the measured phenomenon is scrutinized and re-examined. We can see that the director collaborates in producing the second component of the hypothetic sentence as well as in enacting a mise-en-scène problem in the subsequent utterance in which he says, "[the audience won't get the focal point" (line 13).

The director is apparently responsive to the designer's talk as well as his physical demonstration and phenomenal expression. Here, participants apparently "look" or envision with a knowledge of how a measure works as a physical and cultural process.

13 Director: [觀眾會不知道距焦在哪裡

[the audience won't get the focal point

14 Designer: 對

right

Subsequently, the set designer agrees with the director's formulation (line 14) and continues proposing a design solution with a conjunctive word in line 15. He says, "so I will try to (.) narrow it." Note that in the micropause in the middle of his speech, the set designer leans forward with his right index finger pointing toward the ground plan and his left hand simultaneously holding and putting the scale aside (see the topmost pictures in Figure-3-31). Then he places his two hands on the ground plan and on the place where the scale sat and where the inscription (represented by the black line in Figure 3-31) was made and this measurement was taken by the analogue instrument, the scale. He first places his hands on the locale where the scale sat and where an inscription was made (see the sequence of hand movement in Figure 3-31). As he utters the words, "narrow it," he then moves hands closer in a parallel motion (see Figure 3-31). The handshapes and movements are not producing numbers, but physically covering a matching distance and are measured against the ephemeral inscription, against the symbolic points where the scale was held to make a reading. The set designer draws on embodied practices and works with resources he has "at hand," including the scale, the ground plan, and bodily parts, to inscribe a one-dimensional contraction and such an inscription should be perceived, in the semiotic environment of work, as intricate manifestations of analogous states of scientific measurement.

15 所以我會試著(.)把它壓縮

so I will try to (.) narrow it

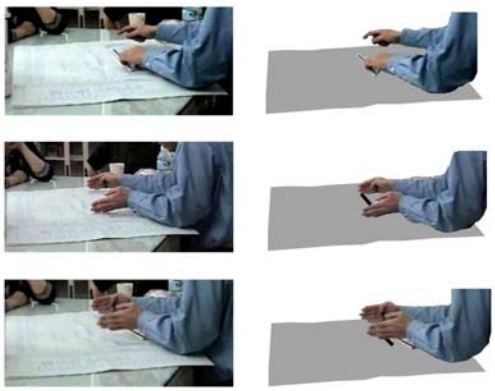

Figure 3-31

16 Director: ((nods head))

Notice that the narrowed size of the stage is not measured or inscribed using an analogue instrument for numbers, but through a series of symbolic and bodily transformations that allow the set designer to work with heterogeneous resources and tools in taking measure. The director shows his agreement with his head nodding in the next turn (line 16) and, in this way, assesses perceptual structures with the use of corporeal and scientific tools and inscriptions. Such assessment and acknowledgement are bidirectional and inextricably tied to the local, practically adequate way for constructing the dimension. The width is both a numerical representation and scenographic imagination. Within what might be considered one and the same dimension such as the stage width or nineteen meters, participants construct the dimensioning activity as an embodied practice. By means of proportional measure derived from bodily parts as a convenient modular unit of measurement, participants interpret and co-determine the meaning of a precise number to achieve its scenographic meaning. As participants' sharing of perceptions about the dimension is embedded in their work with the ground plan and their embodied interaction, these communicative processes reveal a

rather pointed conflation of the scientific and scenographic; the analog and perceptual; the diagrammatic and the spectacular.

In both conversational instances, we have seen that the matrix of embodied practice within which participants measure the spatial dimensions of scenery objects (i.e., the thickness of the panel and the stage width). The measuring process is both interactive and heterogeneous in "precision." Embodied actions supplement the dimensioning activity and scenographic perception. In the second conversational excerpt, as the number requires careful assessment, the set designer utilizes two proportional systems, including the analog instrument and the human body, which is used to elucidate the scientific inscription (i.e., nineteen meters) he made and in particular, to formulate a mise-en-scène problem for ongoing design talk. Participants must use their own perceptions to construct the scenographic meaning of the ruled system of measure. However, to construct a purely objective domain of problem solution, the set designer orients co-participants to the ground plan; his hands reach down the ground plan, taking the distance needed to be narrowed. By doing this, he takes an action analogous to scientific measure. This measuring action has a temporal/spatial structure in that it refers to and extends the ephemeral inscription being made earlier and uses that inscription as a built environment to construct the action in progress. The dimensioning practices we have examined closely not only reconfigure a rich symbiosis between the human body, language, and gesture but also reveal the imaginative and material phenomena of communication in the workplace setting.

Summary of Findings

The work practices center on the use of architectural drawings to communicate dramatic ideas and imaginations. Architectural drawings offer one of the three contexts

that this dissertation finds are sites where dramatic imaginations are produced. The participants perform the stage props and worlds. The participants imagine that they are dancers dancing in a visual field in which imaginary figures can be projected. People communicate dramatic imaginations through embodied activities and in relation to imagined stage settings and in discursive relationships with the interlocutors who vividly perform these worlds. The speakers speak, evaluate, question or challenge each other's imaginations. Dramatic imaginations are also developed and transformed in talk-in-interaction. Features of "mise-en-scène" communication include the following:

(1) Mise-en-scène communication concerns imaginary phenomena (i.e., scenes, properties, and characters), which develop through the situated work with all the participants.

(2) Architectural drawings function as visual contexts of meaning within which embodied activities relevant to the visual images and codes take meaning from them.

(3) Mise-en-scène communication is socially organized such that participants speak to relate to each other's dramatic ideas in different ways; in both discursive sequences and landscapes of actions.

(4) Mise-en-scène communication is not just about visibly embodying and performing the shape or form of things and figures, but also of communicating collective and complex imaginings (e.g., of props, actors, performances, and sizes of things) in transformational terms. For example, the choreographic imagination reveals how the participants envision human movement within complex, dynamic, and imagined spaces full of all kinds of information (e.g., the lighting design, the set design, the projection design, and the audience's response and feedback). Mise-en-scène communication consists a complex process of transfiguring each other's imaginings in communicative reality. Building such theatrical complexity is a collaborative endeavor, which reflects

and entails all forms of creative imaginings that can be visualized through the use of multiple modalities such as speech, gestures, and bodily movements.

Moreover, my analysis of mise-en-scène conversations has probed talk and embodiment and their relationships to the material and semiotic fields of scenographic drawings, which are all about being embodied. I have demonstrated that the visual representations emerge as, in Hanks' (1999) notion, a phenomenal field—a field of acting and thinking that becomes relevant as participants move through it with their body and their senses. It is through embodied interaction that shapes what is talked about, how the scenography is understood, and what imagination gets built. In particular, participants perform the props and scenery, adding a kind of third dimension to the two-dimensional world of front elevations. The bodies also become corporeal schemas in motion—a convenient modular unit of measurement that supplements participants' perceptions about numbers and spatial dimensions of the ground plan. Moreover, the bodies, as embodiments of the dancer and choreography, are geographically rooted in the pictorial space which is physically sculptured and receives its spatial character as a performing site. In all of these mise-en-scène practices, no one communicative resource may be able to serve as a sole clue in how meaning is created and how scenographic imagination is built. Meaning and imagination are accumulated in the successive organization of talk, the moving body, and the visual fields. Moreover, through the organization of talk and gesture, participants instantiate the design problem and display their understanding as embodied formulation and reformulation of the specific mise-en-scène problem that poses theater practitioners. Such an embodied (re)formulation is procedurally consequential in how participants find creativity and discover design solutions as a result of their framing and performing such problems multimodally.

Chapter 4

USING SCALE MODELS AND MINIATURE PROPS TO COMMUNICATE

Introduction: The Miniature Props in Human Communication

A communicator makes sense through its verbal and nonverbal interaction with the world. Not only does the communicator perceive and express the world through language-use but also through the physical actions the communicator establishes through it. The world where a communicator lives is very often material. The material world can extend one's communicative abilities and practices. Gee, Michaels, and O'Connor (1992) demonstrate the discursive process in which the teacher engages a child, Mindy, in the activities of candle-making and the discursive process of bringing the candle into existence. They show that the teacher constantly builds lexical items (e.g., hot wax, a string, or a knot) in the child's business of candle-making. As the lexical items describe the materials used in candle-making, they also provide explicit information about the activity. The authors mainly focus on the process of language acquisition and "semantic expansions" among young children. As the authors point out, "There is a sense in which both the teacher's interaction with Mindy and the preceding conversation above between parents and child are interactive slot-and-filler activities centered around adding more and more descriptive and lexically explicit detail around a single topic" (p. 259).

As a communication scholar, I also observe that Mindy's actions and interaction with the candle-making kit and the material things in a set definitely imply a transformation in the teacher's way of communicating. Moreover, Mindy's steps to making her candles (e.g., her choosing the wax, picking up the color or picking up the molds and much more) provide what Goodwin (2003) terms as "the perceptual structure"

in the environment wherein the teacher and Mindy work together and are able to coordinate their verbal interaction in a smooth and flowing way. To understand the teacher and the child's verbal interaction when they engage in making the candle, I see the steps and the practical objects for use are equally important in both the communication process and the construction of discourse. Similarly, the use of props and things is absolutely essential to mise-en-scène communication. Things have an influence on how the artists communicate and build scenes. By looking at how language-use and the arrangement of small things are developed in a moment-by-moment fashion and what kind of resources are utilized as the participants locally manage talk and interaction, we understand in more detail the generation of meaning and the importance of both verbal and bodily interaction with small things like those in the candle-making kit.

Moreover, there is an intimate relationship between theater, props, play, and human communication. Drawing on Gregory Bateson's concept of "metacommunication," Schechner (1985) is concerned with the development of a theory of theater as a symbolic play, which exhibits a "layering of seeing" such that the performer sees the audience, the performer sees self as performing, the audience sees the performer, and the audience sees self as audience. The play is symbolic and can only be done on the stage. Schechner (1985) states that the symbolic play is not only part of the text, which consists of dialogue, but also part of the mise-en-scène, which consists of stage props and images (p. 272).

The symbolic play process is not limited to theater. Symbolic play occurs when human beings use or rely on sets of realistic objects or props to construct and enhance their language-use, scripts, and communication. Children certainly use objects as part of the symbolization process. For example, a baby doll usually represents self in children's talk. Casby (1997) reviews important findings of research on young children's

communication and symbolic play. He concludes that both the children with language impairment and those with normal language abilities are able to use toys to project symbolic schemes and to create a theme-driven dramatic or creative play. Both children with language-impairment and children of normal language are provided with toys for free play and toy sets (e.g., doll, spoon, cup, chair, bed, pillow, tractor, trailer, etc.). Casby (1997) concludes that young children with different language abilities consistently demonstrate (1) concrete play actions that can be applied to specific play objects (e.g., rubbing); (2) representational play actions which are associated with the conventional use of the objects (e.g., feeding a doll with a toy spoon); (3) symbolic actions which involve the substitution of one object for another (e.g., using a stick to pretend to feed the doll). Although it is not conclusive whether a range of toys designed for free play or a set of miniature toy objects presented in a prescribed order better assist a child's development of symbolic communication, all these objects facilitate a child's performance of different play actions and his or her use of language during play to describe, label, or even enter into a more complex dramatic scheme.

As yet, there is a dearth of research on how adults use sets of miniature objects to communicate or to build the imaginativeness of talk in everyday social interaction. The mise-en-scène communication is a site worth investigation. In mise-en-scène activities, the artists are often given a set of miniature props or object replicas. The set of miniature objects typically includes a black, three-dimensional model that demonstrates in miniature how the set design will look when completed. It is a box set—a set fully enclosing the stage space on three sides like the walls of a room. Other miniature props in the set usually contain furniture pieces (e.g., chair, desk, screen, or bed, etc). On the one hand, in many moments in the design meetings, linguistic meanings are only completely and fully communicable in seeing people's interaction with both the box set and the

props. On the other hand, the set of miniature objects seemingly enables the artists to organize their activity and build such a symbolic play described by Schechner (1985). In other words, these objects help the artists to communicate, create, and deal with the complexity of the symbolic play of theater—of how one sees self as performing onstage, sees the audience, sees self as the audience, and of how the audience sees self as audience.

In the following analyses, I show how the participating artists employ the set of miniature realistic objects to communicate dramatic ideas by arranging the props and building the dramatic scenes vividly. To understand how people communicate their dramatic ideas, it is also important to see how verbal and nonverbal meanings as arising together on the miniature stage that permits the accomplishment of such communicative acts. For example, the speaker's hands reach inside the model box. Then the speaker verbally indicates that the actor is entering the stage. The gesturing hand crosses the stage or stands half in. The model box is a replica of the theater. It allows the speaker to become completely transformed on the stage into the character he is portraying. When all the subtle linguistic and physical dynamics are called into play by the enclosure of space, by the physical relationship of embodiments including the hands, the model, and props, the listeners see the symbolic play and understand the unfolding drama. By observing how the artists use the miniature set to communicate, the analyses in this chapter consider communication as constituted by not only linguistic and nonverbal performance, but also by an ensemble of stage systems used, including the text, the props, and the stage.

Design Meetings in a Theater Workshop

The primary data for analysis are video recordings of naturally occurring

activities. The data were collected by videotape at the SBL company in Taipei. Two set designers, Jen and Chen, were in charge of the set design for the theatrical production of a Chinese opera, the *Peony Pavilion*. The *Peony Pavilion* was written in 1598 by the Chinese dramatist, Tang Xianzu, of the Ming dynasty. The opera is a drama of love. Bridal Du, daughter of Du Bao and Madam Du, falls asleep in the garden. In her sleep, Bridal Du dreams of meeting a young man. Upon waking, she desires for this dream lover and languishes with lovesickness. Eventually Bridal Du dies of her longings and is buried in the garden. In the end of the drama, the young man in Bridal Du's dreams helps bring her from the underworld back to life. The story ends with a joyful reunion and happy marriage. The opera was staged in the National Theater and Concert Hall of Taiwan. Preparing this theatrical production took more than two years and involved various theater artists.

I undertook some conventional fieldwork and carried out observation of the design meetings for a period of three months in the later phase of the SBL company's preparation meetings for this opera. I primarily undertook participant observation in the design meetings in the SBL company. I videotaped five design meetings wherein participants worked with the scale model and discussed the scene design for the *Peony Pavilion*. The design meetings varied in length between three hours to six hours. The main participants included the producer, Wei, the director, Kim, the artistic director, Lin, and two set designers from the SBL company. In some design meetings, other participants were also present in the room such as the technical director, the costume designer, the lighting designer, and the stage manager. They attended these meetings to learn the updates of the set design and to respond to concerns of primary participants. All the participants are male and their ages range from 33 to 52.

Early in the overall production process, the director, the artistic director, and the set designers have already worked together to create settings that are appropriate to the play. The director and the artistic director aided set designers in creating the artistic vision and ideas. Then the two set designers and their assistants worked together to build a three-dimensional scale model that demonstrated in miniature how the set design will look when completed. It is a box set—a set fully enclosing the stage space on three sides like the walls of a room. The model resembles a box with one side being removed. Reid (1996) points out that most design work is done in the 1:25 or 1:50 model:

> The model provides a means of developing an aesthetic visual response and testing the validity of that response against the various specific needs of the play. Consequently the model is something of an art from in its own right, although its essential function is as the centerpiece of communication between the designer and everyone concerned with the production. (p. 60)

Indeed, the scale model is very important in the communication of and working through ideas among people involved in a theater production. In the design meetings, the three-dimensional model demonstrated the physical, visual world in which the opera will take place.

After the set design concept is made concrete and the set designers have built the three-dimension model of the stage, the producer of the *Peony Pavilion* was invited to attend the design meetings. The producer was a new participant in the design meetings. He played a key role in the decision-making and budgetary management of the whole production. In these design meetings, the participants worked together in a scene-by-scene fashion. They arranged or re-arranged the scene settings. With the scale model and miniature props, the participants also rehearsed the set with the script in a scene-by-scene fashion in the scale model. In this way, detailed design and astonishing appeal for each

scene can be configured on the miniature stage. Brockett (2000) points out that "a setting can be organized in many different ways; arranging it to maximum advantage for a specific production requires careful and cooperative planning by designer and director" (p. 369). The importance of group discussions in which the participants share ideas, consider the perspective of others and collaborate in setting up scenes cannot be overemphasized in mise-en-scène work. The design meetings usually started with the set designer's or the director's presentation of the set design for certain scenes. The producer and the artistic director listened to their presentation and observed how each set functioned. After the presentation, an open discussion followed. Participants asked questions, clarified design objectives or technical issues. They also discussed the production concept and the aesthetic style. Adopting a minimalist style, the set space of the *Peony Pavilion* very often included only several chairs in a bare stage. One issue that participants frequently discussed in these design meetings was just how much the space can be identified as a specific, fictional place.

Brockett (2002) elaborates that visualization underlines the transfer from literary text to performance space depending on the production concept. According to Brockett, if the production concept demands that locales be represented realistically, the scene design will include architectural details, furniture, and decorations that clearly indicate a specific time period and locale. Another way of characterizing the stage space is to configure the stage as flexible and nonspecific. The scene design will be relatively simple and mainly involve movable sets and props to play most of the scenes on the flat floor of an undecorated stage (pp. 369-370). The production and setting for the *Peony Pavilion* adopts the second approach. In this production, the theater artists including the producer, the artistic director, the director, and the scene designers began their research and preparations about two years ago before the time the play was formally staged in the

national opera house of Taiwan. At the very beginning of the preparatory work, the participants have decided to adopt a minimalist style so that the audience can fully focus on the actions of characters and their performance and repertories on the stage.

In the design meetings, participants were all devoted to building a well designed stage setting which is finely balanced between the minimalist style, the aesthetic dimension, the script's demands, and the overall production concept. Therefore, in these design meetings, a rearrangement of the stage, the set, or the props was constantly simulated and demonstrated. In this production, the producer, who is a renowned scholar in ancient Chinese opera also played the role of dramaturg. Bly (1996) defines a dramaturg's work:

> The dramaturg also serves as a resource and active collaborator during the planning stages of a production and throughout the rehearsal period. The production dramaturg is optimally that artist who functions in a multifaceted manner helping the director and other artists to interpret and shape the sociological, textual, acting, directing, and design values. (p. xxiii)

In the design meetings that I observed, not only the director but also the producer took the lead or had an active voice in the configuration of the stage space. Their opinions reflected a wide variety of topics—the budget of the production, discussions on the text, casting and design, major stylistic and imagistic staging approaches, and character interpretations. They also raised aesthetic questions when the set is vividly presented and arranged on the miniature stage. They sometimes assembled the scene by themselves and asked for a change of the stage environment by repositioning scene elements already present in the model box or by replacing, removing or adding other scene pieces. These stage changes would be scrutinized again by all the participants. In particular, the director may experiment various scene arrangements and go over the same scene repeatedly to

achieve the visual spectacle necessary for the progression of the drama. Notice that the *Peony Pavilion* is an extraordinary opera that has fifty-five scenes and takes approximately twenty hours to perform. Because of this reason, the design meetings were often very lengthy and exhaustive because the size and complexity of this production.

Building Scenes and Arranging Props

This section examines the model box activity as the scene design work is carried out. A three-dimensional model of the proscenium stage of 1/50 size is placed on the tabletop in the center of the room. The three-dimensional model and set props in miniature clearly present pictures in the set designers' minds. Again, the model space not only gives a convincing demonstration of the set design in the set designer's mind, but also offers other participants a direct relationship with the set design by responding or by leading the designers to consider other alternatives. Scenes can be easily set up, visualized, discussed, and experimented through the embodied arrangements and manipulations of set props on the stage floor within the model box. Deetz (1994) argues "the interaction process as the site of meaning production" (p. 577). There is no doubt that meaning arises from the use of language and bodily behaviors in communicative interaction. An issue to be considered in this section is the relation between talk, communication, and the use of a set of miniature objects as the constitutive dimension of artists' everyday communicative practices. More importantly, I demonstrate how symbolic and reflexive speech behaviors closely link to the use of miniature objects in interaction. Drawing on Schechner's (1985) ideas, the symbolic and reflexive speech behaviors include the act of seeing scenes as the audience, the act of seeing self as performing, the act of seeing co-participants as audience and so forth. In this section, the participants cooperate linguistically and nonverbally to build up three scenes in the

Peonly Pavilion—Du Bao's home, the boudoir class, and the bedroom. One important and symbolic language play/act derived from the concrete arrangement of props is the discursive evaluation of each scene as the audience. I show that the mise-en-scène communication rests not only on how small things are arranged on the stage but also on how a more abstract representation of these small things (i.e., as home, class, and bedroom) is rendered using (imaginary) audience participation.

Setting up "Home"

The process of transforming a work of literature from the page to the stage involves many complex issues. In design meetings, participants draw on material resources to physically stage and build the scene. As mentioned, in a simplistic setting, only a few set props and scenery pieces would be combined, assembled, or arranged onstage to create the atmosphere of a place. The way the set props and scene pieces are assembled is also determined by many factors. For example, the stage space must accommodate actors' movements and actions as performance space as well as render the interpretation and imagination of the fictional place possible. My discussion begins with the setup of Du Bao's home, which is the opening scene of the play. The conversation opens with a scene-setting sequence rich in handling and arranging the miniature props on the stage's floor. In the scale model, the stage floor is painted white; the left side of which is slightly elevated by a curved slope. The stage backdrop features a Chinese ink painting of abstract landscape. On this monochromatic and minimalism stage setting, the scene composition can be freely rearranged by furniture pieces in miniature such as desks, chairs, and partition screens. There are many small objects ready-to-hand, serving as set props as well as design elements.

In mise-en-scène activity, when one picks up a miniature prop and deploys it onstage, one manifests a physical, material construction of the scene's setting. The scene is discussed and shared between the builders and the spectators and both communicators see and use the miniature stage by which the dramatic fantasies are manufactured and manipulated. In the following conversational fragment, three participants are seated in front of the model box, including the producer, the artistic director, and the director. They occupy the central viewing position of the scale model. The set designer, Chen, is seated in the left side of the model box and the set designer, Jen, stands beside the model box. The director and set designers present the scene arrangement for the opening scene.

In the first line, after announcing the first scene, "Du Bao's home," Chen leans the body toward and reaches his hand into the model box. In line 2, Chen verbally creates the scene by saying, "there is a chair and a desk for Du Bao" (line 2). This utterance occurs simultaneously as the speaker performs the scene-setting task with hand and fine finger movements including a reach, grasp, and placement of a miniature chair on the stage floor. The arrangement not only composes the scene but also conveys tacit, spatial information (e.g., the positioning of the chair in the center stage) which is made visibly accessible to viewers. Then Chen turns his head and looks for something in the pile of miniature props placed beside the model box. This is a transitional moment. The director reaches his hand inside the scale model and slightly adjusts the positioning of the chair. At this moment, the set designer finds the miniature desk while the director's body still occupies the central place of the model box.

Now the director's hand is still inside the scale model. This hand positioning preserves and maintains his current activity frame of scene-building. Chen puts the miniature desk at downstage left, placing it right in the director's line of sight (see Figure 4-1). Immediately following the set designer's placement of the desk in the model space,

the director moves his hand toward the desk, reaching, grasping, and then placing it at the set space. As the director places the miniature desk beyond the chair, he concurrently indicates that “the desk is here” (line 3). In this way, the activity of staging props is not only collaborative, but also has a sequential sense of embodiment such that the pervious talk and the current, physical interaction with a specific object are interconnected. To set up the scene the set designer, Chen, envisioned in his previous utterance in line 2, the director must both hear and see the scene and the stage directions (i.e., there is a desk and chair for Du Bao). He must perform the scene-setting action with an appropriate prop collaboratively provided by the set designer. Then he must place the desk correctly beside Du Bao’s chair.

[Excerpt: Du Bao’s Home]

01 Designer Chen: 第一景是杜寶家

the first scene is in Du Bao’s home

02 有一個椅子一個桌子給杜寶

there is a chair and a desk for Du Bao

((Set designer looking for miniature desk))

Figure 4-1

In the next line, the set designer speaks and places another chair for the second fictional character, Madam Du (line 5). When uttering this sentence, Chen arranges

Madam Du's chair next to the desk being placed by the director in the previous talk. In the setting up of Du Bao's home, individuals communicate using small objects of furniture pieces and the like. There is a pause in the next turn. The set designer, Chen, withdraws the gesturing hand from the three-dimensional model and then he steps sideways to the model box. The change of bodily orientation may signal the cessation of the scene-setting activity. Sitting or standing, other participants face and scrutinize the scene on display on the tabletop environment. Then the artistic director takes a turn and makes an evaluation of the spatial arrangement. He says, "it's too empty" (line 7). The producer, in the next turn, assents to that evaluation (line 8). Aligning his opinion with the artistic director, the producer again reminds participants of the representational norm for the scene-setting activity—building a place like "home."

03	Director:	桌子這裡
		the desk is here
05	Designer Chen:	另一個椅子uhh給杜母
		another chair uhh for Madam Du
06		(8.0)
07	Artistic Director:	太空了
		it's too empty
08	Producer:	對-不像一個家
		right-it's not like a home

In mise-en-scène conversation, a theater landscape is neither immediate nor straightforward. It is always discursively constructed. At this point, the communication incorporates the speeches of the originator of the scene, the actual users of the stage, and the audience. Theater practitioners work tougher and make the scene. The audience sees, imagines, or challenges the scene as the kind of space (as a home). The stage in

communication is not only the physical place but the space, spectator, and time (i.e., the sequential pattern of talk and evaluation) aggregate, which generates a centripetal field that connects scenes and imaginations.

Then the set designer, Jen, walks toward the model box, picking through the miniature props. Jen re-arranges the stage props. He simultaneously produces a verbal explanation and says, “or we can drop two screens mm *panels* down here” (line 9). Jen prefaces his utterance with a discourse marker, “or,” to initiate a proposal of a scene design change. In task-oriented dialogue, the usage of the word, “or,” seemingly relegates the status of the ensuing proposal as an intermediary negotiating. In his following talk, Jen installs two miniature panels serving as the backdrop of the scene while the desk and two chairs remain unaltered. After Du Bao’s home is re-arranged, the set designer is positioned sideways to the audience so the setup of the stage is visible to the audience. In a four seconds’ pause, the producer slightly nods head and evaluates this scene arrangement positively. In line 11, the producer comments, “now it looks more like an intimate space” (line 11). Now the assemblage of the small objects is recognized as the legitimate embodiment of interiority. Following immediately, the producer takes a turn and judges that the scene now looks more like “a living room” (line 12).

09	Designer Jen:	或是我們可以把兩個屏風panels降下來=
		or we can drop two screens mm *panels* down here
10		((4.0))
11	Producer:	現在比較像一個intimate的空間=
		now it looks more like an *intimate* space=
12	Artistic Director:	=像一個客廳
		=more like a living room

One thing to notice here is how participants gradually transform their linguistic representations of the stage space from “home,” “an intimate space” to “a living room.” The activity of setting up Du Bao’s home is both a material and meaning building practice in which alternative scenes, their dramatic, cultural meanings, and their representations are constantly formulated. In the next line, the set designers both move to the model box, placing two cardboard cutouts of characters standing upright very close to each of the chairs on the stage floor (see Figure 4-2). The collaborative placement of two figures in miniature is concurrent with Chen’s verbal sentence in which he indicates that “here are Du Bao and Madam Du” (line 13). The cardboard cutouts, physical embodiments now establish stage figures and create the positioning of actors in relation to existing props onstage.

13 Designer Chen: 杜寶跟杜母在這

here are Du Bao and Madam Du

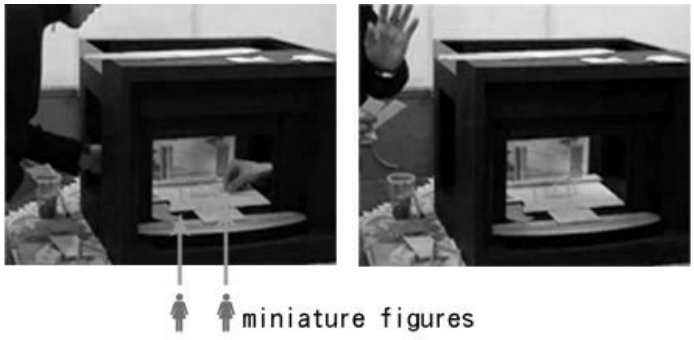

Figure2

Figure 4-2

14 Director: 所以燈一亮

so when the light is on

15 幕一拉開就出現這個景

the curtain opens this scene

16 hmm 杜寶的家

hmm Du Bao's family

The boundary of the scene-setting activity is set off rather clearly by a sort of big change of bodily posture. The speaker steps back in order to make the arranged tableau available for the public assessment. Seeing the stage, the director takes a turn, using the prefaced word, "so," to initiate a formulation of the newly arranged scene. In his following talk, in a language of spectacle, the director describes in a vivid sense that when the light is on, the stage curtains would rise to reveal this opening scene—Du Bao's family. Here, with the imaginary cast being staged, the neutral stage space is domesticated and meaning emerges from the dynamic interplay of aesthetic and symbolic spaces. The arrangement of this tableau has created the physiognomy of the stage. Notice that in the conversational exchange, each theater practitioner imparts his own interpretation of the space in a turn-by-turn fashion. On a deep level, all persons speak from the point of view of both users and spectators of the stage. After the scene has been set up, the next turn becomes a place where imaginary seeing occurs and where language can construct or transform the meaning of the prospective materialization of the scene.

In sum, it is worth noting that the drama is brought into being by both creative and symbolic process in which set props and their theatrical meanings are discursively and physically enacted. On an interactive level, the three-dimensional model occupies the central place of work. In setting up the scene, the arranging parties occupy this central space so they can work with the small objects. Mise-en-scène work involves a lot of physical interaction with material objects inside the tiny space of the scale model. The embodied actions typically include a grasp, a maneuver of an entry into the black box, and a placement of the prop on the stage floor. After the scene is set up, the individual steps sideways, making the arranged scene or tableau visibly available to co-workers. Several communication modalities are combined to make the play vivid. People must

handle small objects. The hands must move through the space. Other participants must see the stage as the audience, who visually and verbally scrutinizes scenes.

Setting up "Boudoir Class"

In the following talk, participants are discussing the second scene of the *Peony Pavilion*. In the original dramatic text, the scene depicts a lesson which fictitiously takes place at Bridal Du's "brocade room." In ancient Chinese literature, a young woman's private sitting room or bedroom is called a "brocade room," which can be literally translated as "boudoir" in English. In this scene, Bridal Du receives a private lesson from an old scholar. The drama peaks when a maidservant, who gets bored in the tedious lesson, plays a fun trick to the old scholar. With the progressive arrangement and handling of props, the verbal and non-verbal exchange that follows illustrates how the play's setting is built in and through talk and communication. Reading the libretto of the *Peony Pavilion*, the director initiates the mise-en-scène conversation and announces the scene title, the "boudoir class" (lines 1-2). In the next line, the director orients to the buildup work of the scene, sitting on his seat but changing upright posture. The director leans toward the model box (line 3). With a miniature chair in his right hand, he places it on the stage floor in the upper stage and these nonverbal actions occur with a verbal indication that this is the scholar's chair (line 4).

[Excerpt: the Boudoir Class]

01	Director:	下一場我們要討論的是:: mmm
		next scene we will do is:: mmm
02		閨孰
		the boudoir class
03		這一景

in this scene

04 一定要有一個椅子給老先生

there must be a chair for the old scholar

In addition to embodied arrangement, there is a tendency in the semiosis of mise-en-scène to use the linguistic evocation of space. In the next line, the artistic director verbally casts another character, Bridal Du, and her acting space—“also a reading area for Bridal Du” (line 5). It is clearly a component of participants' dramaturgic competence to familiarize themselves with the dramatic text, the plot, and the characters' roles and their respective stage actions. The participants must understand, for example, that the fair lady would need a desk for her to engage in some table-top reading activities. But some of the dramatists' most sophisticated work is done when they co-participate in the building-up of the stage space by interacting with each other directly and through objects. In the next line, responding to the artistic director, the set designer Chen moves in the workspace, placing a desk and a chair arranged relatively close to the scholar’s chair (see Figure 4-3). After the embodied demonstration of Bridal Du’s reading area, Chen walks sideways, setting the scene to display publicly. In several seconds, the artistic director brings forward an emergent, scene problem. His judgment is that “the teacher’s chair and the student’s desk are cluttered together” (line 8).

05 Artistic Director: 杜麗娘要做功課

also a reading area for Bridal Du

06 Designer Chen: 她的桌椅在這

her desk and chair are here

Figure 4-3

07 (5.0)

08 Artistic director: 這老師跟學生的椅子擠在一起了

the teacher's chair and the student's desk are cluttered together

The producer assents to that evaluation, provides dramatic perspectives, and elaborates still further on this topic. In line 9, the producer says, "right-the old scholar is instructing so his chair should be::mmm=" (line 9). The producer's utterance in the end of line 9 encounters some problem, indicated by the prolonged syllable and "mmm." The director ties his utterance, providing a syntactic completion and semantic elaboration of the producer's prior turn. The director suggests moving the chair up (line 10). Notice that in line 9, the producer's utterance not only evokes the theatrical plot, suggesting a repositioning of the scholar's chair for the character's instructional purpose. More importantly, in his utterance, the producer sees an imaginary character performing onstage. The desk and the chair are placed on the stage. On the one hand, the empty stage floor now becomes a culturally elaborate theatrical system; the stage becomes the classroom. Therefore the language of representational behaviors in this space (e.g.,

reading or instructing) can now be sequentially produced and the play is now in a concrete situation of enunciation in a concrete area before the audience. On the other hand, the audience sees these smaller events (i.e., the placement of desk or chair or the combination of desk and chair) have their stories. The audience can envision that Bridal Du is reading and the scholar is instructing. Theatrical art is certainly the art of the performance and actions of human beings and I will elucidate this point in the section that follows. Here the communication and the exchange of dramatic ideas are symbolic. The participants rely on the set of miniature props arranged inside the tiny space in the development of symbolic activity. They see the empty space being transformed by the (re)positioning of the desk and chair and see the symbolic meaning of such (re)positioning as a theatrical act.

Then in line 11, the set designer Chen responds with a series of actions taking place sequentially within the three- dimensional model of the proscenium stage. He moves in, facing the model box with his hand rearranging the set props (see Figure 4-4). As the set designer finishes the re-arrangement of the scene and moves off physically from the three-dimensional model, the second lengthy pause occurs and all participants simply look at the proscenium stage. The lengthy silence here is, without any doubt, work-relevant, probably treating the scene as a negotiable matter.

09	Producer:	對-老先生要講課的所以他的椅子應該::mmm
		right-the old scholar is instructing so his chair should be::mmm=
10	Director:	在上面
		=moved up
11	Designer Chen:	((arranging props))

Figure 4-4

12 ((8.0))

Then the producer makes a positive assessment of the spatial representation, commenting that the scene looks much like a classroom (line 13). Employing communicative hedges, the artistic director orients toward a turn of disagreement, embarking on a spatial correction which takes into account the distance between the audience and the positioning of the set pieces. He comments, “mmm but the teacher would become too small” (line 14). Notice that when commenting orally, the director also bends his body, adjusting his eye position level, seemingly to measure from the forestage area (see Figure 4-5). The posture is a clear expression of observing and an act of spectating by adjusting one’s eye, head, and bodily posture so as to get a good view of the small objects. Second, when observing a scale-model environment 1/50 of full size, one has to keep his or her vision proportionally between the miniaturized space and the imagined amplification of that space. Here, by kneeling down and gazing out upon the stage floor, the artistic director not only adjusts his way of seeing, but also modulates the sense of scale. The three-dimensionality of the scale model allows individuals to see and

construe scenes and the stage from almost all angles, from above, from the side, or from the front. By bending down, the speaker probably can be said to performatively reduce his body as a point of reference in the environment. How the participants translate or disambiguate the size of things in reduced scale in their talk and interaction will be discussed and captured in the next section. The nonverbal aspects of measurement and communication will get primary attention because small sizes need to be disambiguated both verbally and nonverbally in communication.

13 Producer: 好-這樣比較像教室

good-this looks much like a classroom now

14 Artistic Director: mmm不過老師會太小

mmm but the teacher would become too small

Figure 4-5

15 Designer Chen: 我們可以把椅子放到前面

we can move the chair down here

As said, the set designers and the director have the artistic director and the producer as the collaborators in building and setting up the scene. The communicative process creates a context in which the totality of the mise-en-scène can be envisioned and constructed. In the next sentence, the set designer Chen again moves toward the model

box, placing the miniature chair in the down stage area and explains that “we can move the chair down here” (line 15).

The moment-by-moment analysis of interaction shows how the participants use the miniature props to communicate and build scenes with their hands. What is interesting is how well the concrete model and props work closely with the symbolic play of human communication. As embodiments make ideas present in the physical world of the miniature model, there exist physical relations of language and mutually elaborating and instant acts of spectating such that the next speaker always sees self as audience and sees the symbolic meaning of theatrical acts inside the miniature stage. Miniature object replicas—the small theater, the desk, the chair, the screen and so forth are so relevant in mise-en-scène communication; they provide a backdrop where the story of Bridal Du is acted out. It is true that some of the dramatists' most sophisticated work of scene design as it is done when theater artists work together and set up scenes by their hands. In this sense, the three-dimensional model of the proscenium stage provides a concrete, “practitioner space” (Brown, 1997). It is also true that the set of miniature objects enable the participants think and communicate in dramatic terms not only about the nonverbal aspects of spatial arrangement and dialogue but also about the symbolic aspects of these material objects. In each new arrangement of the props/set, the participants also see the staging of stories in their linguistic expressions. The participants use the miniature objects to communicate and both the material resources and the verbal and nonverbal processes are critical to maintaining the construct of the boudoir class and the artists’ symbolic communication.

Setting up "Bedroom"

In another scene called "Spirit Roaming," theater artists deal with the final moments of Bridal Du. In the beginning of the scene, Bridal Du will lie on the bed in her bedroom. The set designer Jen initiates the mise-en-scène work. He walks toward the scale model, picking through the miniature props. Jen stands beside the black box, moving his hand in from the top of the three-dimensional model. A half-inch bed in miniature is pushed out onto the stage floor. Then Jen places the prop at the down stage area close to the thrust of the stage, verbally indicating that "Bridal Du lies on the bed" (line 2). There is a temporary silence in which the participants face the stage platform, standing or sitting gazing the scene demonstration. The producer takes a turn and evaluates the scene. In line 4, the producer watches the stage and makes a comment: well the bedroom is a private space. In the following commenting sequence, the artistic director agrees with the producer. Both the producer and the artistic director want to create private atmosphere in this scene because the fair lady's bedroom has the quality of a secret space. Therefore, they ask for a repositioning and rearrangement of the bed (lines 4-6). The artistic director suggests moving the bed to the side of the stage (line 7). Jen standing beside the model box starts to move and rearrange the scene piece. Standing beside the box set, Jen cannot see the stage arrangement from the audience's point of view. Jen holds the prop in his hand in a temporary, micro-kinesthetic stop in which he asks, "here" (line 8). When uttering the word, "here," the set designer, Jen, looks up and turns his eye gaze toward those who now sit facing the front of the model box (see Figure 4-6). Then there is a short pause wherein the set designer's hand moves into the model box, holding the prop against the stage floor near a side entrance of the stage. Meanwhile, the focus of his gaze still checks co-participants' assessment and feedback.

[Excerpt: The Bedroom]

01 Designer Jen: 杜麗娘死去這一景

on the scene of Bridal Du's dying

02 杜麗娘躺在床上

Bridal Du lies on the bed

03 ((temporary pause))

04 Producer: 這臥室應該是有一點隱密的空間

well the bedroom is a private space

05 artistic director: 對這是小姐的閨房

right it's the fair lady’s brocade room

06 producer: 所以我感覺床太近觀眾了

right I think the bed is too close to the audience

07 Artistic director: 也許移到旁邊一點

maybe move it to the side

08 Designer Jen: 這裡

Here

Figure 4-6

09 ((short pause))

Helping the set designer find a correct place, the director takes a turn and says, “too peripheral” (line 10). Also simultaneously, the producer says, “it’s almost curtained off”

(line 11). Both speakers use waving hand gestures to direct Jen to move the prop toward the center of the stage (see Figure 4-7). Through the dialogue in which stage directions are given by co-participants, Jen keeps moving the prop to find the correct place. Then as the prop is moved close to stage center, the artistic director takes a turn. Overlapping the arranging sequence, the artistic director directs the set designer's stage business and says, "ok right there" (line 13).

10 Director: [太旁邊了

[too peripheral

11 Producer: [幾乎在布幕裡面

[it's almost curtained off

Figure 4-7

12 Designer Jen: ((moving the prop))

13 Artistic Director: 好那兒好

Ok right there

First, from this conversational excerpt, communication entails bodies; communication also works with real property—the scale model. The scale model as real estate includes physical and fixed assets such as land or buildings. This external reality is enclosed by three walls and an open front area so people can look inside. In this way,

playing and cultural experiences are directly played out before the audience; playing and cultural experiences can also be given a location through communication. In this communicative process, the spectators have a role to play. They constantly play with words, things, and actions in order to make things happen in this small world of theater. Second, the embodied practice of moving the prop around the stage reveals both the micro and the theatrical level of meaning. Participants rely on each other's vision for the joint inspection of selected features of an environment—the audience's point of view. The process is collaborative, manipulating the experiential orientations of audience to stage—one of the ontological concern governing the scenographic construction on the modern proscenium stage. Stanton Garner (1994) writes:

> The proscenium stage continues to project optimal viewing positions as insistently as it establishes visual centers for its scene arrangement: reinforced by the stage's rectangular framing and the audience's perceptual disposition toward a symmetrical, balanced point of view, this theater tends to privilege viewing positions extending on an axis perpendicular to stage center. (p. 84)

The whole interaction of moving the prop upward, downward, or to the periphery imports the visual axis of an embodied spectator viewing within the picture frames or the proscenium arches. Hence the communication of the scene in fact operates within a phenomenological field which Garner terms as "an oriented space:"

> At the point at which I insert myself as the lone spectator in the auditorium, this field is immediately focalized through a specific perspective....where the object discloses itself as it might appear to an abstract subject—phenomenological space is oriented space. The stage and its elements are now situated in terms of such variables as frontality, angle, and depth; to the extent that I allow myself to inhabit the point of actual perception, theatrical vision is now implicated in the

> laws of visual dynamics as they are engaged by these variables and as they derive from (and interact with) the fact of my embodiedness. (p. 46)

As implied by Garner's concept, theater making involves production of embodied spectatorship. The embodiments certainly do not exist outside of the material particularities of the proscenium stage. The very structure of theater architecture is organized in such a way as to presuppose an ontological distinction between the viewing space of the audience and the acting space of the drama. As the architecture obliges the spectators all to look in the same direction through its picture frames, one's vision does not alter with a change in perspective; the front of the proscenium stage will always be the front of its architecture no matter which angle it is viewed from. In the data, the stage prop is arranged and moved through a complex account and a series of physical movements through the stage–the account and movement are registered in terms of a distinct and schematically embodied sense through which spectatorship is constituted and oriented.

In summary, in this section, communicators constantly build scenes with their hands and object props. The scale model creates a space for making things happen. In all these instances, as said, communication demands all the participants to play with words, things, and actions. The scene-setting work is tactile and is done through people's physical interaction with the model box and small objects. More importantly, each step and each embodied arrangement and rearrangement of the set props demand theater practitioners to position themselves as audiences and rethink the drama. It is in this sense that human communication is symbolic. Human communication includes both the entire, miniaturized resources and make-believe activities whereby the spectacle and an imaginary landscape beyond the immediate set can be fully envisioned. All discursive and bodily acts which happen inside the miniature stage invoke questions, suggestions,

and imaginations and require a re-thinking or a re-working about a dramatic construct and the actual world's spectatorship. In the following section, I demonstrate that the stage becomes the blueprint of performances such that participants utilize miniature resources to accomplish another significant theatrical practice—the establishment of stage figures in scenes.

Staging Fictional Characters

Brockett (2000) notes that one of the functions of scene design is to visually characterize the acting space. Staging ideas and the placement of actors are often simulated by the stage setting made material in the scale model. This is because stage space defines appropriate areas for action. The notion of the stage as a constituent of the plot is discussed by Reid (1996):

> Stage space defines appropriate areas for action….The space is structured...so that actors' positions can be manipulated to point changing relationships between characters as the plot develops. And the importance that dramatic structure tends to place upon entrances and exits is likely to require that these points of access to the acting areas be emphasized. (p. 24)

Reid points out that entrances and exits are important theatrical devices. As States (1992) also argues, "Theatre produces its effect . . . through a deliberate collaboration between fronted ('on' stage) and its backside ('off') whereby anticipation is created through acts of entrance and exit" (p. 33). This section describes the process in which theater artists simulate actors' entrances and exits using the stage backdrop as the place where theatrical action takes place and how, in some cases, the backdrop may actively constitute that stage action.

Making Entrance

Making an entrance onstage depends greatly on the stage setting. The scale model is a replica of the actual stage and the placement of stage doors enables participants to invent an actor's stage movements in the existing performance space in a dramatic situation. Prior to the first sentence of the following conversation, participants have set up the scene in which two chairs and a desk symbolically represent the living room are already placed on the miniature stage. In the conversation that follows, with the scene already being arranged in the scale model, participants discuss how to integrate the setting and actors into the whole. This is the first scene of the *Peony Pavilion* in which the main character, Du Bao, is seated in his chair in the living room and his daughter, Bridal Du, will be asked to enter up center, crossing the stage slowly to make her first appearance on stage. In the following conversation, Bridal Du's entry is communicated and simulated. The particular moment in the mise-en-scène conversation represented in the excerpt shows the collaborative process of staging fictional characters on the existing stage in the scale model.

In his first utterance, the director vividly demonstrates the staging of the main character using speech and an abundance of hand movements. The speaker's hand holds a miniature figure. Then he carefully places the miniature figure standing beside a chair onstage. At the same time, his verbal utterance indicates that "Du Bao is seated here" (line 1). The rest of participants all stand and scrutinize this arranged tableau. In the next line, the producer slightly nods his head and asks, "where does Bridal Du enter" (line 2). Responding to the producer, the director takes a turn and says, "Bridal Du could enter from here" (line 3). At the same time, the director holds another miniature figure in his

hand, moving it from a stage entrance in the upstage[11] down to the stage center, creating an embodied demonstration of the passage of actor (see Figure 4-8). Meanwhile, the director's verbal utterance in line 4 indicates that Bridal Du will then walk downstage (see Figure 4-9).

[Except: The Entrance]

01 Director: 杜寶坐在這裡

Du Bao is seated here

02 Producer: 小姐從哪裡上場

where does Bridal Du enter

03 Director: 杜麗娘可以從這裡出來

Bridal Du could enter from here

Figure 4-8

04 走到這邊

walking down to here

[11] Brockett (2000) explains common stage vocabularies. A basic convention is the division of the stage into areas, which facilitates giving stage directions. "Upstage" means toward the rear of the stage. "Downstage" means toward the front.

Figure 4-9

The producer indicates his hesitation and makes suggestions. In his opinion, the actor probably walks “too far” (line 6). On the one hand, stage directions are not really part of the text, but are part of mise-en-scène. The staging of both the play and actors belongs to the director. The producer, also the dramaturg, is not in a privileged position of correcting stage directions. The linguistic token, “hmm,” may display the speaker’s hesitation to stage the actor’s entry. As the staging work is carried in workshop or done in the real stage, albeit in small scale, every participant plays the role of the audience who helps rehearse and stage scenes. The miniature stage is communicatively managed. Seeing the embodied performance onstage, all the speakers transform or compose performance reality in all kinds of forms of talk (e.g., hesitation, reformulation, or even joke). On the other hand, the director’s embodied demonstration clearly shows from which entrance the main character enters and her stage movements from the side entrance to the center of the stage. In theater, entrances can come from all sides of the stage for creating dramatic and interesting movement on stage. In this scale mode, each side wall is made up of three curtained stage entrances, allowing for a great variety of stage entrances and exits. The scale model is a proportioned replica of the opera house. It is also the director’s primary means of communicating his staging ideas. The communication goes

on with the set designer Chen taking a turn and rehearsing the scene again. The miniature figure representing Bridal Du still remains in the same stage position. The set designer's index finger points at the stage floor near the side entrance located at downstage left. The verbal sentence, "or Bridal Du can enter from here" (line 7), occurs simultaneously with the use of pointing gesture. In the next line, the set designer moves his index finger from this side entrance to stage center (see Figure 4-10). As the set designer Chen's hand moves across the stage, his hand movements knock over the props onstage, but specify much of the main actor's movement.

05 Producer: hmm

06 太遠了

that's too far

07 Designer Chen: 或是杜麗娘從裡出場

or Bridal Du can enter from here

08 到這

to here

Figure 4-10

09 (4.0)

10	Producer:	所以杜麗娘可能從椅子後面出現
		so Bridal Du would show up from behind the chair
12	Artistic	我想這都不是問題
	Director:	I think it's not going to be a problem
13		因爲家理怎麼出現都無所謂
		because this is her home she can appear from any place

In the next line, a short pause occurs as the set designer withdraws the gesturing hand from the stage floor. The embodied performance is assessed. The producer responds to the geography of the stage movement in his utterance in which he utters, "so Bridal Du would show up from behind the chair" (line 10). In the following talk, the artistic director offers his advice, suggesting that the set designer's proposal and his stage arrangement are acceptable (line 12). The artistic director goes on to elaborate his point by saying, "because this is her home she can appear from any place" (line 13). Here the artistic director evocatively depicts the home scene, resolving the staging problem by a discursive domestication of the scene. The language recontextualizes the meaning of the stage space and through discourse; the dramaturg ensures that the protagonist's walk has realized the drama's plot in the set designer's embodied, staging demonstration.

The above conversational episode shows how staging is done in both verbal and nonverbal communication. Participants have rehearsed ways to execute a series of stage action and movement—Bridal Du's entry to the stage. The stage space of the miniature model is continuously used, staged, or embodied by miniature figures or by hand gestures. The embodied performances demonstrate participants' staging ideas by moving the hand across the stage floor. These embodied actions vividly devise possible stage movements and provide a resource of communication with other participants. Rather than

presenting a finished structure, the embodiment of stage performance builds on each other's discursive elevation. Theater artists experiment different ways of walking down the stage. The miniature figures of 25 mm and the three-dimensional model space provide a material, tactile environment wherein the actor's entrances and movements can be devised and communicated. The process of making an entrance not only demonstrates how participants collaborate and work closely through the mise-en-scène practice in which stage figures are established, whether physically or materially, but also reveals how the improvised stage action is given through the communication of theatrical reality.

Making Re-Entrance

McAuley (2000) describes that when an actor comes into the presentational space he or she is entering a fictional world that is already present, created by set, objects, and the dramatic action that has already occurred. McAuley (2000) goes on to write, "the entrance is charged with particular energy for not only does it constitute a new event within the fiction, but it marks the moment when the performer enters into the fiction" (p. 100). This also applies to human communication. People's communication inside the miniature stage considers not only one of an actor's actions (i.e., entrance or re-entrance), but also the overall thrust of a stage action—the place of entering, the positioning of other characters, the dramatic plot, and the audience's feedback. When people use the scale model to communicate, they use it as an embodiment of the imagined theater scenario. The scale model enables communicators to simulate ways in which characters are shuffled on and off the stage's platform. The symbolic aspect of mise-en-scène communication considers and transforms human movements as an episodic form of the drama (i.e., its fictional time and place).

In the context of the episode, the participants are arranging the stage props for the third scene of the Peony Pavilion, the “boudoir class.” In this scene, Bridal Du is taking a lesson from an old scholar. Her female servant, Fragrance, plays a fun trick to the scholar. Scolded by the scholar, Fragrance is kicked out from the classroom. After Fragrance leaves the scene, the classroom scene comes to an end. Without any act intermission or curtain call, the next scene follows immediately. In this following scene, after departing from the classroom, Fragrance reenters the stage and finds there is a garden. The conversational episode begins with the director explaining that Fragrance will leave the classroom in the end of the scene (lines 1-2). His second sentence is performed with a series of hand movements. The director points at the stage floor and his index finger moves from center stage to the stage entrance located downstage right (see Figure 4-11). In line 3, the director goes on to explain that the turning over of scenes occurs at this moment. The director continues his talk and says, “Fragrance herself goes to the garden” (line 4). At the same time, the director’s middle finger points at another stage entrance located upstage right. Then he moves his middle finger across the stage, embodying Fragrance’s stage movement to the garden (see Figure 4-12).

[Excerpt: The Garden]

01	Director:	這一場最後
		in the end of this scene
02		春香離開教室後
		Fragrance leaves the classroom

Figure 4-11

03 然後mm下一景

then mm the next scene

04 春香自己來到花園

Fragrance herself goes to the garden

Figure 4-12

So far the director has created an elaborate, embodied demonstration of stage movement in which Fragrance's exit and reentry are discursively depicted and physically acted out. There is a short pause in which participants relate to the scene through various forms of interaction such as observing close or viewing from a distance. The artistic director first speaks and his comment frames a problematic, mise-en-scène situation: but

it looks like Fragrance is already in the garden (line 6). Notice that as the artistic director speaks the word, “the garden,” his hand gesture points toward the stage floor and makes an abstract circle over the center stage area. This embodied action apparently manipulates the problem information, “the garden,” in its spatial domain on the stage floor. The producer shows his agreement and gesturally points to the model box. Then he takes a turn and says that “the stage does not look like a garden” (line 7). Indeed, the “garden” is apparently no more than an almost bare stage. The producer follows up on this problem, elaborating and negotiating the dramatic plot in the original story (line 8). Here, the communication of both the stage action and the stage space is situated at the nexus of differently constructed notions of textual, visual, imaginative, and spatial/geographical spaces.

05		((8.0))
06	Artistic Director:	看起來好像春香已經到了花園
		but it looks like Fragrance is already in the garden
07	Producer:	對-這個舞台一點也不像花園
		right-the stage does not look like a garden
08		在故事裡她發現有個花園
		in the story she finds there is a garden

In the sequence that follows, the set designer Jen rebuilds the scene. He holds a small object in his hand, placing it at a rear side of the stage. Then the set designer Jen slowly pushes the small prop outward to the stage center. As he pushes the miniature prop to stage center, he describes that this is a “door” and the door would come out first. His utterance is overlapped by the set designer Chen who calls the prop, “the garden gate”— a terms which suggests the specific relevance of the prop to the design of the garden scene. Repairing his own usage, the set designer Jen places the “garden gate” at

the stage center. After the garden scene has been set up, the director re-stages Fragrance's entrance. His middle finger points at a location behind the "garden gate." Then the pointing finger slightly moves toward downstage. This gestural movement is accompanied by the director's verbal utterance, which explains that "now Fragrance enters" (line 12). In mise-en-scène activity, the next speaker can always formulate or re-formulate the dramatic meaning of the scene and its tableau vivant in terms of how the audience might envisage the fictional setting. The artistic director formulates the theatrical image: so Fragrance gets to the garden (line 13). This scene formulation explicitly contrasts his previous scene formulation in line 7 (i.e., Fragrance is already in the garden).

09	Designer Jen:	也許門mm先出來
		maybe the door mm [come out first
10	Designer Chen:	[花園門
		[the garden gate
11	Designer Jen:	花園門在這裡
		the garden gate comes to here
12	Director:	現在春香出來
		now Fragrance enters
13	Artistic Director:	所以小春香到了花園
		so Fragrance gets to the garden

By rearranging the props and stage figures embodied by hand gestures, the participants exhibit a capacity to utilize these material resources to build the scene and to establish more elaborate character movements. Discourse itself also constitutes a particular kind of mise-en-scène practice by which the cultural production of space can be formulated. In solving a particular mise-en-scène problem occurring in the turning-

over of scenes, which involves a reorientation of fictional time and place, the participants use both language and direct manipulation of the body and the prop in miniature as a means of transmitting not only performance knowledge, but also temporal and spatial structures that formulate and reformulate the stage as drama or the stage as a stage. In and through communication, the participants invoke or challenge their (i.e., the spectators') relation to two dramatic worlds: Fragrance is already in the garden vs. Fragrance gets to the garden. For us, it is important to notice that such communicative process is resourceful; it is linguistic, material, and embodied. The linguistic and material resources at work and interactionally at play help to create and visualize stage worlds. Moreover, mise-en-scène communication also attempts to build or separate realities. Communicators use object materials and physical actions arranged in a set way or in an improvised way so the spectators can envision and imagine *the* story.

Making Simultaneous Entrance and Exit

So far we have seen staging practices in which characters' entries are simulated. There are moments when dramatists set about going on and off simultaneously. This section examines the collaborative work in which several characters are being put on and off the stage. Communicators need to know the finer points of play. They also know how these finer points (i.e., entering and leaving the stage) build the experience of the spectators in the theater place. The communicative task in this section shows how the participants co-act and co-behave inside the model space through their local forms of participation, which contains the miniature props, the imaginary audience, and the dramatic text. In a scene called the "Spirit Roaming," the dramatists deal with the final moments of Bridal Du. The scene depicts that Bridal Du faints and dies in front of her mother, Madam Du. The mother is to leave the scene immediately because the death

would establish an immediate entrance of the flower goddess escorting Bridal Du to the underworld. It is the director's job to plan the use of space and devise stage directions and floor plan on which multiple stage movements depend.

In the beginning of the conversation, the director narrates, "when Bridal Du dies" (line 1). Then director begins his embodied demonstration with the placement of his middle finger in the stage space. With this physicalized mise-en-scène, he indicates that "Madam Du stands here" (line 2). In the next line, the director goes on to illustrate the dramatic development by saying, "then the flower goddess enters the stage" (line 3). Then the director linguistically portrays the stage as "the underworld" (line 4). Notice that in line 4, the director's words and the utterance, "now this is the underworld," are produced in a basic communication between people, the working model, and the literary/spatial imagination that the text or plot embodies. As we have also seen in the previous section, scenes must be arranged so that the speaker can communicate with others both to achieve and share his own constructions of the dramatic worlds. Here, the construction of the scene, the "underworld," purely derives from both the linguistic mise-en-scène and the bodily mise-en-scène. The hand moves on the stage and develops a series of embodied stage actions. The miniature stage is also the place where this minidrama gets played out on the stage and where the communication and the audience's vision rest. When the director performs the characters' stage actions (i.e., where Madam Du stands) inside the tiny space, the rest of participants take their seats, observing, questioning, and reflecting to make sense of the scene. The participants are audiences. They build meaning and dialogue after the director's skillful direction of imaginary actors in real time is present. In the next line, the artistic director gesturally points to the model stage and puts forward a dramaturgic concern: "But Madam Du still stands there" (line 5). His comment provokes opinions from the producer who provides an explanatory

account which points to the theatrical dilemma—Madam Du still stands in the dramatic world, the underworld (line 7). This is the moment when participants try to conjure up a picture of the stage action and the unfolding stage event. The director initiates a proposal with "well then" and continues with his body lowering down and hands on their way to the model box.

[Excerpt: The Underworld]

01	Director	當杜麗娘死去
		When Bridal Du dies
02		杜母站在這兒
		Madam Du stands here
03		然後花神從這裡進來
		then the floral goddess enters the stage
04		現在是冥府了
		now this is the underworld
05	Artistic Director:	杜母還在那裡
		But Madam Du still stands there
06		Because uh=
07	Producer:	是冥府
		=because Madam Du should not be in the underworld
08	Director:	那麼這樣
		well then

The director’s hand is already inside the tiny model space when he utters, “when Bridal Du dies" (line 9). He goes on to narrate the scene, "Madam Du [leaves" (line 10). This sentence is embodied by the director whose finger points at the stage floor and visibly demonstrates Madam Du’s departure. The embodied departure is overlapped by

the set designer Chen, who collaborates in the building of dramatic performance through hand-on simulation of the flower goddess' entrance. In line 11, the set designer projects the drama and also moves his finger across the stage while he renders the scene linguistically: then the flower goddess enters (see Figure 4-13). The deliberate construction of stage images emerges as a result of collaboration and the fine-grained, moment-to-moment communication of the movements of stage figures in their represented world. Both the embodied demonstration and language-use contribute to the phenomenal "layering" of dramatic performance. The data presented here exemplify through the complex participations and construction of the dramatic representation (i.e., the underworld) and the stage event in which the characters' entrance and exit as the subset of theatrical performance is collaboratively rehearsed. Several modalities are simultaneously combined to provide rich, multisensory resources in the communication of different levels of reality—the stage as the stage and the stage as the fictional world. The miniaturized, material recourses and hand gestures together allow individuals to develop visual plots and to stage the simultaneous entrance and exit of actors onstage through which the illusionistic drama is bodily, discursively, and materially enacted.

09		當杜麗娘死時
		when Bridal Du dies
10		杜母離開
		Madam Du [leaves
11	Designer Chen:	[然後花神進場
		[then the flower goddess enters the stage

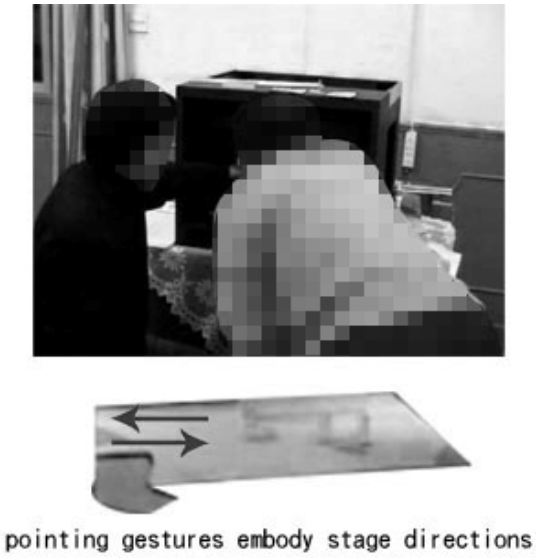

Figure 4-13

Mise-en-scène communication is sometimes difficult to understand, especially when the emphasis is on the directorial endeavor. The emphasis on creating a dramatic environment combining the text, the plot, the imaginary actors, their actions, the space, and the audience. As I have shown in this section, in the communication process, scenes/stories are not created out of nothingness, but within the very perceptual environment of the miniature model which has all the elements of the theater that the theater practitioners use to uncover or devise imaginary characters, dramatic plot, and symbolic meaning. Within this tiny work space, I have shown how fictional characters are embodied and staged. Such a staging practice is certainly multimodal. By moving hand gestures or mobilizing inanimate objects in the model space; by literally putting them onstage and setting them cross the stage floor from different entrances and exits, participants communicate theatrical meaning of three theatrical worlds: Bridal Du's

home, the garden, and the underworld. On the one hand, staging practices are essential in mise-en-scène work. Garner (1994) points out:

> With the actor's entrance, the stage as a whole becomes a differently oriented field in the broader field of spectatorship, refocused in terms of a subjectivity that is never reducible to spectatorial object. The very nature of this internal (dis)orientation adds new...layers of perceptual giveness to the components of mise-en-scène (Garner, 1994, p.47).

On the other hand, participants use the miniature model and props to communicate because these material resources situate communicators in a viewing position so they can project themselves as immediate audiences who watch and elaborate the imagined, dramatic scenarios. If human communication is a symbolic play, it matters how communicators, as Garner (1999) writes, "engage the complex positionality of theatrical watching." Garner argues:

> Theatrical space is 'bodied' in the sense of being comprised of bodies positioned within a perceptual field, but it is also 'bodied' in the more fundamental sense of 'bodied forth,' oriented in terms of a body that exists not just as the object of perception, but as its originating site, its zero-point. To stage this body in space before the witness of other bodies is to engage the complex positionality of theatrical watching. (Garner, 1999, p4)

Mise-en-scène communication is one particular kind of communication practice through which the play set is embodied and turned into a concrete and tangible site of communication. The stage is built in and through the direct, face-to-face interaction with hand movements and miniature representations of real objects in the miniature environment of theater. The embodied presence of actors fills the space not only physically, but also discursively and imaginatively with various theatrical and pragmatic

meanings and orders being constantly projected, performed, and discussed through dramatists' dialogue and communication in the process of theater making. The object and the scale model appear small. They participants use these recourses to build and transform realities. It is in this sense that communication in the design workshop is interactionally, materially, and symbolically fashioned.

Measuring Small-Scale Phenomena

We have discussed scene space is configured through arrangements of props and through the establishment of stage figures. Set space is also formed and imagined through the actions of people working with various conceptualizations of spatial scales and with varying degrees of spatial information. This section offers an analysis of measuring practices in mise-en-scène work. Measuring practices are very often embodied. Measuring practices are discussed through how people measure the phenomenon by the material surround, by bodily units, and by multimodalities. Measurement and the determinations of a measure are significant work practice in mise-en-scène activities. Scene designers construct three dimensional scale models in order to show in miniature how the set and the overall design space would look. Model scale, in this particular instance, has the value of 1:50, which relates the theater architecture and set properties to that scaled measure of three dimensions on a much smaller (piece of paper) cardboard paper or box.

Reid (1996) points out that most set design work is prepared and done in the 1:25 mode. While a 1:25 scale model is used to demonstrate the scene design prior to the actual production of a theatrical play, theater artists learn to look and interpret the scale and the scene of visual multiplication. Reid points out that when working with the 1:25 model, all directors, actors, and production personnel will learn to relate model boxes to

stages and develop increasing accuracy in their "professional visions of the 25 factors" (p. 60). Learning is the core of Ried's observations. My analyses pay attention to how people do measurement as cognizing observers whose actions cannot be separate from the current scene or the immediate setting of action that makes up the meaning of scale.

Measure by Surround

In mise-en-scène work, the work settings sometimes house both the gigantic (e.g., the proscenium stage or the meeting room), the medium (e.g., the human body), and the miniature (e.g., the small props and the scale model). The coexistence of small things and large things make the mise-en-scène activity an interesting site to study human actions. This part of analysis examines how, in Reid's terms, the professional visions of the 50 factors are disambiguated in the immediate, material settings. With a micro-interactional approach, the analysis that follows shows how the material setting, the human body, and the scientific/mathematic tool (e.g., a ruler) constitute meaningful units of measurement which enable participants to make sense of a measure (i.e., the numerical representation).

In one conversational exchange I observed in the design meeting, the set designer Chen places a platform downstage above the orchestra pit. In their discussion, participants decide to use this platform for Fragrance's performance in the classroom scene. Then the following conversational exchange occurs between the artistic director, the set designer Chen, and the producer who currently stands outside the picture frame. In his talk, the set designer Chen's index finger points at the platform and he simultaneously notes that he is going to illustrate the largeness of the platform (lines 1-2). In his next line, Chen partially repeats his own words in his prior utterance (line 3) and keeps pointing on the platform in miniature (see Figure 4-14). Coordinating the shift of his speaking turn, the set designer raises his pointing hand from the three-dimensional model,

initiating a change in bodily orientation in the beginning of his next utterance. The moment Chen begins to re-position his body by turning toward the center of the room the artistic director also adjusts his sitting position posturally and looks up from the three-dimensional model to Chen. Chen still holds the speaking floor by stretching both his arms outward and toward the side walls of the room. Then he gives measurement, “this platform is this house (.) from here to here”(line 4). As Chen utters the phrase, “from here to here,” his arms and hands pointing toward the walls have stretched to their limits (see Figure 4-15). Chen’s next utterance notes that he is measuring the platform by its “width” (line 5). In the construction of this simple utterance, the speaker still maintains the same measuring posture. Meanwhile, the speaker gazes down briefly and mainly looks toward the artistic director to check his recipiency.

[Excerpt: The Platform]

01	Designer Lin:	14:40	我說明一下
			let me explain
02			這一塊有多大呢
			how large this platform is
03			這一塊
			this platform

Figure 4-14

04 這一塊就是這個房子(.)從這兒到這兒

this platform is this house (.) from here to here

Figure 4-15

05 寬

width

Overlapped with Chen's word in line 5, the producer raises his voice, exclaiming: "that is really wide" (line 6). Looking toward the producer, Chen immediately confirms the producer's perception of the space. He nods his head and says, "YES" (line 7). Here, Chen's speaking turn of measurement in line 4 and accompanying bodily posture and upper torso movements provide communicative resources through which the producer can constitute his understanding and evaluation of a perhaps abstract scale phenomenon. Moreover, the conditions under which the measurement is made to incorporate three observable entities at the same time—the small object (i.e., the platform in the ratio of 1:50), the room, and the human body; each forms an embodied tool of measurement (with a different scale of measurement).

06 Producer: 這麼寬阿

that is really wide ((louder speech))

07 Designer Lin: 是阿::

YES::

First, Chen's body acts as a meaningful unit for his own demonstration of a huge scale. The arms are parallel, extending up into space and reaching out into the surrounding world. As has been discussed in the first chapter, doing measurement at work involves the process of creating a set of unit schemes often derived from bodily proportions as a means of measuring. Second, the index fingers point at the surrounding walls of the room, embodying the site of the current building as it exists immediately before all the participants. The room defines the range within which participants can imagine and project an observable, maximal extent of a spatial phenomenon (i.e., the "largeness"). The speaker acts upon the environment in a particular way; a way that provides a unit of measurement capable of instantiating the phenomenon of a large scale within the participants' co-existing, mutual surround. Embodiment of movement in the local environment and embodiment of knowledge are interconnected. Here, Chen designs units of measurement and observation to be maximally concordant with various interpretative devices: his pointing gestures and hand movements, verbal sentences, and words that are required to transpose observations and measurements to the surrounding world.

In the talk that follows, the artistic director looks upward, asking Chen a question, "what is the size" (line 8). The set designer Jen takes a turn and answers, "six meters in width" (line 9). In the next turn, Chen also answers by pointing at the platform, repeating the information already being given by Jen (line 10). The artistic director nods his head and looks at the platform, engendering a response by a repetition of the number (line 11). The talk consists of a sequence of repetitions of the same number in which speakers seem to organize and confirm the meaning of that number. Then the producer elaborates on the theatrical meaning of the "six meters" by relating that numeral representation to theatrical

performance. The producer shows his understanding and comments in line 12, “that’s enough for Fragrance’s performance.”

08	Artistic Director:	多少 what is the size
09	Designer Jen:	六米寬 six meters in width
10	Designer Lin:	這塊六米寬 ((pointing platform)) six meters in width
11	Artistic Director:	六米 six meters
12	Producer:	那春香可以盡量表演 that’s enough for Fragrance’s performance

It is apparent that participants generate observations and meanings through units of bodily comportments and through the architectural site as a site of embodiment in which measurement along the various spatial dimensions of large and small is made. The measuring process also illustrates how individuals organize their ideas about the largeness of the platform with the measurement dimensions by which they construct and draw on *in situ*.

Measure by Bodily Units

Helmholtz (1878) traces the genesis of measurement through the body. According to Helmholtz (1878), “In measuring, we are simply employing the best and surest means we know to determine what we otherwise are in the habit of making out by sight and touch or by pacing. Here our own body with its organs is the instrument we carry about in space” (p. 259). In mise-en-scène work, bodily units constitute such a meaningful scale

that is appropriate for scaling objects dimensionally reduced. The following excerpt concerns a metric unit of a “step.” The analysis shows how the height of a platform onstage is multimodally measured and communicated by participants. In the beginning of the videotaped interaction, the director is explaining a scene in which the main actor, Bridal Du, is singing an extract from the opera. The conversation begins with the director moving his index finger from the downstage space to a platform located upstage. In this way, the director demonstrates and embodies the actor’s stage movements (lines 1-2). Then the director points to the platform and turns his head toward the rest of participants behind him, asking “what is the height of this” (line 3). Then the speaker moves on to a possible number delivered by himself, “thirty five [is it” (line 4). Multiple participants’ simultaneous utterances overlap the director’s utterance: forty five centimeters (line 5).

[Excerpt: A Step]

01	Director:	杜麗娘
		Bridal Du
02		她要走上來到這裡
		she walks and steps on to this
03		它這個有多少高
		what is the height of this
04		三十五[是吧
		thirty five [is it
05	Multiple	[四十五公分
	participants:	[forty five centimeters

In response to the collective answer, the director slightly nods his head and repeats this number in his next utterance (line 6). By nodding his head, the director proceeds to perform how the numerical representation should be interpreted. He elaborates his prior

talk and says, “then that’s more than a step” (line 7). Of particular interest here is how the director performs a body measure during this utterance. The director raises one leg off the ground, holding it momentarily by a single-limb support (see 4-16). Rraising his foot from the ground, the director creates a measure of “a step,” roughly thirty to forty centimeters. The artistic director moves in, also lifting one leg in order to measure the height of a step (line 8). Joining with another speaker to implement an action of measure shows an embodied, measuring process in which the unit measurement is organized and made sense by a gestural matching. The bodily portion, a leg’s height, is used as a common unit in the activity of measuring together.

06 Director: 四十五公分

forty five centimeters

07 那一腳跨不上去

then that’s more than a step

Figure 4-16

08 Artistic Director: 一步大概是這麼高

a step is about this high

As Paterson (2005) states, “Before it becomes an abstracted, visual set of symbols on a surface, geometry involves the actual bodily process of measuring space. In the

measuring process the hands, feet, eyes and body are involved in spatial apprehension and perception" (p. 116). The body forms embodied knowledge of geometry. As the forty-five-centimeter height is conceptualized as a step, participants are able to formulate that abstract number with their feet. The body is not just an apparatus for gauging; it sometimes constitutes the physical-material instantiation of felt qualities in everyday life (e.g., a step). Second, the act of bodily motions establishes a demonstrable field wherein the co-participant can observe and easily practice that measure though the plastic capability of the human body. Within this brief conversational exchange, a metric measure space does not simply consist of numbers; it is rather our cultural understandings of how people move in space and the measure that people can derive from their bodies. In another conversational episode, participants are sitting around the model box and working on the installation of a trolley of wooden planks on the stage floor. The set designer Chen points at the trolley in miniature and says, "the trolley measures about thirty centimeters high" (line 1). In his next line, when Chen says, "my arm is about thirty centimeters," he extends right arm outward, iconically demonstrating the length. Just as the ruler, the scale of the human body is employed as a normative unit, a material resource ready-to-hand in the meaningful determination of "thirty centimeters high."

[Excerpt: The Trolley]

01	Designer Chen:	這一個車體高約三十公分
		the trolley measures about thirty centimeters high
02		我的手臂大概是三十公分
		my arm is about thirty centimeters
03		所以大概這麼高
		so it is about this high

From the above analyzed excerpts, we observe the use of feet, hand or arm, as a general model for gauging the distance of forty-five and thirty centimeters. Adamson (2005) argues, "as a measurant, the body is not any particular measure; rather, it is a thing that measures, an element of the natural world that brings measurement to the things it encounters, thus bringing meaning into our experience" (pp. 176-177). People build metric relationship between the things to measure and bodily units. Hence, if we consider the numerical representations without taking embodiment into account, we overlook corporeal processes and bodily knowing in everyday work practice (Lave, 1998).

Multiple Modalities of Measure

Through micro-interactional study of measuring practice, such as represented above, we have documented how participants draw on communicative resources including the setting in the surround, the feet, or hands to gauge or to take a measure. Measurement also requires participants to employ a variety of tools (e.g., a ruler) to take a determinate measure. The following excerpt is illustrative of the contingent, heterogeneous process of assembling together units of measurement. The set designers are helping the director to measure a ramp in the scale model. Because actors will wear platform shoes to perform on the stage, both the director and the producer wish the slope of the ramp as slow as possible. Diminished in size, the ramp to be built in the theater will have height of 15 centimeters and length of 2.5 meters.

In line 1, the director and the set designer Chen are looking at the ramp and determining the length of the ramp. The director repeats what the set designer had informed him such that the ramp is "two meters and half long" (line 1). In the next line, repeating this sentence, the director looks around the environment (line 2). His next utterance in line 3 begins with a deictic term, "from here." Over the words, "from here,"

the director initiates an embodied act of measuring; he stretches his right arm to point at a place on the wall (see Figure 4-17). Over his second deictic term, “to here,” in line 3, the director turns his head to the left and points at the space in the left side of his body. As the utterance comes to an end, the index finger point is still moving, trying to take the measure of the end point of 2.5 meters in terms of a fixed object in the immediate setting. Then the director secures his gaze and points at Chen who sits a few inches away from the director. Pointing at Chen, the director goes on to indicate that the distance of 2.5 meters ends “nearly here around you” (line 4). So far the stretched arms have enclosed an invisible distance and region the speaker tries to measure.

As the directors’ hands still hold the measurement, Chen nods his head and shows his agreement in line 5. Then the director calculates the slope of the ramp and says, “two meters and half um descending by fifteen centimeters” (line 6). Here the director is determining the slope of the ramp by measuring the height of the ramp. Chen verbally repeats the phrase, “fifteen centimeters.” Then he suggests and says, “that’s not too much” (line 8). The director is convinced. He turns his head toward the producer standing behind him, seeking his opinion (line 9). To convince the producer, the director initiates an embodied act of measurement. He stands up and walks toward the wall. Focusing people’s attention on the wall, which is also the place the director previously pointed at in order to give the length measure of the slope, the director points at the wall and uses a hand gesture to take a measure of 15 cm from the ground (line 10). Here, due to the camera angle, the director’s pointing and measuring acts are observed but not filmed.

[Excerpt: The Ramp]

01 Director: 兩米五的距離

two meters and half long

02 兩米五是

two meters and half about

03 從這裡uh::mm到這mm

from here uh::mm to here mm

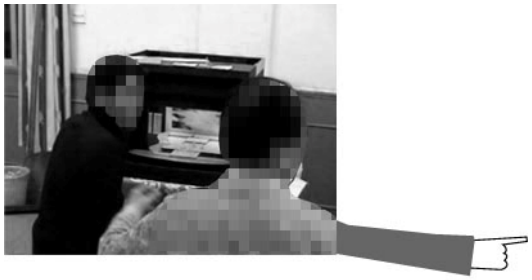

Figure 4-17

04 差不多到你這邊

nearly here around you

Figure 4-18

05 Designer Chen: 差不多((nods head))

almost

06 Director: 兩米五um下十五公分

two meters and half um descending by fifteen centimeters

07 Designer Chen: 十五公分

fifteen centimeters

08 真的很少

That’s not much

09 Director: 好像是-你感覺怎麼樣

right-how do you think

10 十五公分大概是這樣 ((measuring on the wall))

fifteen centimeters are about this

In the next utterances, Chen finds that measurement on the wall problematic (lines 11-12). Correcting the director's measure, Chen stands up, walking toward the wall. Meanwhile, his extended right thumb and index fingers are held spread apart to approximate fifteen centimeters between tips of fingers. As Chen says, "this-see my hand," his fingers which remain the same measuring gesture reach the wall. He moves his fingers around the place being pointed by the director. The measuring fingers now superimpose a correct measure on the wall, on the transient measure instantiated by the director. Holding his hand against the wall, Chen elaborates further on the location that he makes the distance of fifteen centimeters by noting that the measure is "just slightly above the white line" (line 14). The white line Chen refers to is the adhesive tape glued on the wall in order to mark the positioning of furniture in the room. By pointing on the wall and using the white tape as a marker, Chen provides the piece of information and keeps measuring process material in the standardization and proliferation of a local measure. Notice that through the director's point, the wall is made to measure the length of the ramp (i.e., 2.5 meters). The measure is made within complex semiotic relation of embodiment in language, the material surround, the miniature object, etc. The body and the linguistic calculably structure the surround through fingers and hand movements. Instantiating and building up measures through a series of bodily praxes, the setting is not just a background against which participants can lean, point to, or touch but as a semiotic field of human activity such that the diverse medium and material tool and instrument (e.g., the bodily parts and the tape) are brought into the situated, measuring (and

correcting) process. Moreover, the full-size space, which includes the room, the wall, the floor, the ceiling, and the furniture, is shared and can be easily brought to life by the interaction. When people get up and walk around, they use this space as the imagined stage where actors will perform. They use the wall as one side of the ramp. Their hands made contact with the wall so they can imagine and communicate the slope of the ramp and arrangement of the performers in space.

Then Chen walks toward the model box, finding and holding a scale ruler in his hand. In the end of talk, he goes to the director, picking the 15-centimeter mark and showing him the ruled distance of 15 centimeters (see Figure 4-19).

11 Designer Chen: 沒有沒有

no no

12 十五公分哪有那麼多

fifteen centimeters are less than that

13 這個-看我這個手

this-see my hand

14 白線上來一點點

just slightly above the white line

15 十五公分就這麼多 ((measuring by ruler))

see the distance of fifteen centimeters is this

Figure 4-19

Measurement, as far as is known, is characteristically embodied. Measurement tools are not absolute. To gain meaningful determinations of the length and height of the ramp, participants embody the measure, constructing and imposing that measure on some assortment of material in their mutual surroundings. Second, measuring is also a cultural practice through which bodies are initiated into particular ways of knowing and interpretations. To gain determination and to solve the problem associated with a perhaps incorrect measure, people rely on measurements made corporeally, environmentally, and scientifically. The activity of measuring occurs at different kinds of work practice. As people do measurement in the mise-en-scène practice, they rely on a heterogeneous array of tools and things that already exist at the mutual surround as convenient units of measurement. Metric measures are instantiated at the moment when, Goodwin (2003) describes, "diverse semiotic media (the body, talk, phenomena in the surrounding scene, etc.) are being juxtaposed to each other to create a coherent action package" (p. 29).

In summary, when engaging in measuring practice, people's talk and interaction shape and are shaped by the physical, environmental, and linguistic modalities within the field of activity. Within this activity framework, measuring is acted out and is based on the inseparability between a particular way of being and knowing through human bodies in the material field of action. I have demonstrated that measuring practice requires people to interact with each other and with the world on a series of levels (e.g., bodily, discursive, or material level). The small-scale phenomenon is measured, interpreted, and acted out as part of problem-solving processes. The conditions under which a measure is made and determined require the observation of multiple modalities as essential components that characterize human communication.

Summary of Findings

In this chapter, I analyze how the participants use the scale model and props in miniature to communicate. Theatrical reality is not simply projected from the head; it is built from small objects. Mise-en-scène communication not only demonstrates theater-making process in and through talk and interaction, but also shows how the artists build the stage that becomes articulated in a system of symbolic ideas. Mise-en-scène communication includes three important perspectives on communication: the symbolic, the imaginative, and the real.

1. Mise-en-scène communication involves symbolic communication in which people see and recognize each other as a particular sort of actor; in which people perceive symbolic meanings of artifacts; and in which people speak as audience. People are drawn or enter particular stage settings and symbolic representations of these settings. They embody the perspectives of imaginary characters or phenomena and their symbolic articulations are driven by imagination about the theatrical world.

2. Again, dramatic imaginations are created and transformed in interactions. Such interactions take place between designers and directors, between imaginary actors and audiences, and between artists and technicians. All these participating roles rely an interactive environment (i.e., linguistic, gestural, and material) which is open to the creation and formulation of different ideas, problems, and actions. By interactions, which enable different versions of communicative reality emerge, all forms of creative imaginings flow from a multimodal participation framework.

3. Mise-en-scène communication begins with doing something. All the communicators have access to multimodal ways of creating, expanding or changing their dramatic ideas. Mise-en-scène communication is both a cultural and material practice participants use to give meaning to the different versions of theatrical constructions that

are present on the miniature stage. The participants keep performing with hands, touching the miniature stage or arranging the small objects and at the same time using embodied actions and activities as a resource for co-participants to build interpretations and meanings.

In this chapter, our conceptualization of communication is also based on understanding the connection between language and miniature objects and the connection the artists are able to make within and between objects presented to them. Each section attempts to identify how the idea and act of theater making are articulated and embodied in complex ways. In the first section, the artists use the scale model and small props to create or re-create places. People build or assemble scenes in the scale model. People who watch scenes build dramas or dramatic imaginations in their minds or in their talk (e.g., evaluations, questions, and suggestions). The second section examines the staging practice in which the stage is embodied by imaginary characters. The placement of the performer and types of entrance and exit are very often embodied with hand movements and gestures. Bodily mise-en-scène constitutes stories. Being an audience who is inside or who imagines himself being inside this small theater, the speaker sees the embodied performance and communicates his realities. The audience helps to build the entirety of a dramatic world, that is, the "*theatricality* of all miniatures" (Stewart, 1996, p. 54). Susan Stewart (1996) sees the "essential *theatricality* of all miniatures" lies in the fact that the direct physical involvement or manipulation of material objects creates a stage of human communication:

> Our transcendent viewpoint makes us perceive the miniature as object and this has a double effect. First the object in its perfect stasis nevertheless suggests use, implementation, and contextualization. And second, the representative quality of the miniature makes that contextualization an allusive one; the miniature becomes a

> stage on which we project, by means of association or intertextuality, a deliberately framed series of actions. (p. 54)

The cultural and symbolic phenomena of small things are not just implied in artists' everyday communication. The miniature objects in a set create a full stage of symbolic communication in which stories/dramas are spoken and created. The scale model and props in diminished size functions as the link between the stage and audience spheres. They constitute an integral part of the creation of dramas which are immanent in the hands of people and in how things arranged or bodily acts performed inside the miniature stage provide a backdrop for stories in artists' everyday communication practices.

The third section extends to the technological side of mise-en-scène work in which the interaction between people, the measuring tools, diverse physical systems, and material environment under investigation constitutes an integral part of the envisaging of stage phenomena. The model box activity takes place in a material environment wherein small things and large phenomena co-exist. Theater artists need to see and imagine small things in a large/correct scale. They develop an embodied response and measurement and test the validity of that response and measurement against the immediate, full-sized surround and various specific needs of the play in and through communication. Consequently, although this chapter focuses on the scale model and miniature objects, it derives from the centerpiece of verbal and nonverbal communication between the participants. In all the conversational excerpts and instances, the scale model and props in diminished size ground the material conditions of practicing theater's many manifestations including the dramatic imaginations. Like in the symbolic play of children, in the mise-en-scène communication, the miniaturized objects in a set remain accessible to all the adult participants and these material resources are an opening into the sensory field shaping, supporting, and influencing human communication and work practices.

Chapter 5

USING 3-D MODELS AND ANIMATIONS TO COMMUNICATE

Introduction: Human-Computer Communication

The field of human-computer communication has a strong focus on interaction between people and technology. Studies of human-computer interaction are multidisciplinary and diversified in their concerns. Suchman (1987) draws on Garfinkel's ethnomethodology for the theoretical framework and emphasizes the minutely observed activities between human and machine. Suchman observes that human-machine interaction is inextricably embedded in a particular situation specified by the physical and technical circumstances and the co-presence conditions following from them. Suchman (1987) states that "the organization of situated action is an emergent property of moment-by-moment interactions between actors, and between actors and the environments of their action" (p. 10). This particular analytical perspective which looks at the details of a particular communicative sequence has expanded research effort and interests in the relevant field of conversation analysis. Interestingly, computer-mediated communication takes a variety of forms, for example, of the internet chat programs (e.g., Ziten & Stein, 2004) and of quasi-synchronous computer-mediated conversations (e.g., Garcia& Jacobs, 1999). Most researchers mainly derive their observations from text-based data. Indeed there is a scarcity of studies that have looked at the role of "mediality" or "materiality" (Alt, 2002) of digital media in shaping real-time users' perceptions and interactions.

Hindmarsh, Heath and Fraser (2006) consider ways in which the material feature of a Virtual Reality system enables participants to talk and interact with one another within a virtual environment. The authors have observed that the "immaterial" virtual

environments are experienced in very material ways. Physical factors such as clicking mouse button and seeing the screen impact on the interaction between people and how they make sense of objects in the virtual space. Hence, the authors argue, the production of action relies on the operation of material technologies (e.g., mouses, screens, wires, and helmets) because the materialities of the interface constantly shape and re-organize co-participant's perspective and interaction at any particular moment in time. This research has provided a valuable perspective for understanding the materiality and cultural embeddedness of technologies and ways in which they shape the embodied production of "virtual" action in the computer-mediated environment.

In the following, we consider and characterize the materiality and medium specificities of one particular digital media application—the graphics design and modeling program of "Maya." This is because our participants in this chapter used Maya to output 3-D[12] models, images or movie clips. More importantly, in my analyses, I focus on embodied action that takes place at Maya, as the locus of praxis itself. Second, in addition to the embodied conduct that this design interface enables, my analysis is also based on the model of "pointing as situated practice" advanced by Goodwin (2002). One reason is that I observed that pointing gesture is routinely used when running and interacting with Maya in the videotaped data. Also, Goodwin's model posits that people's everyday environment is often materially constructed and should be understood as signifying elements. Pointing gesture, in particular, is capable of instantiating such signification in people's everyday life.

In the first section, I seek to explain how people use pointing and other sensory modalities to interact with the specific material configurations on Maya's interface such

[12] Alt (2002) and many other researchers in digital technologies use the abbreviation, 3-D," to refer to digital, visual representations of three-dimensional models, scenes, or animations on a two dimensional screen. Following Alt, this study uses the word, "3-D," to describe the computer graphics of three-dimensional models, objects, and scenes in this chapter.

as the screenic text, the mouse cursor, the visual image, or the pop-up command. These specific media properties of Maya software and computer graphics constitute a resourceful, semiotic environment, thereby expanding people's participation in a highly specialized practice in the process of outputting a 3-D object. In the second section, I analyze how Maya's 3-D configurations organize participants' perceptions about the stage space and virtual actors' movement through it. In exploring Maya's interface and its relation to mise-en-scène practice, I find forms of pointing gesture are fundamental in shaping the director's dramatic ideas and stage actions from place to place. Third, I examine the way in which people measure and calculate the scale length of scene objects in reference to the grid, the square module, and other objects represented within the modeled space. Pointing and hand gesturing as manifestations of a geometric faculty provide one major resource for measuring different 3-D objects.

Design Meetings in a Theater Workshop

The data were also collected by videotape at the SBL consulting and design company in Taipei city in Taiwan. The SBL company is a theater design studio. As said, the SBL company gains profit from professional design consulting and contracted services in professional theaters. The SBL company also participates in design competitions. In this part of research, I undertook successive periods of field work and undertook videotaped recordings of the company's meetings for a scene design competition in Taiwan. The theme of the design competition is to create spatial configurations of *The Birds*—the classic Greek comedy by Aristophanes. The open competition requires the submission of visualizations of the design concept and design space presented with paper images, three-dimensional models, or computer simulations. The winning designs will be displayed in art exhibits around the country.

In the SBL design studio, the set designer, Jen, is in charge of this project. Jen designed the stage set and scenery. The set is built in an open site which configures the birds' city (see Figure 5-1 in the below). In this stage space, there is a three storey building characterized by an artistic expression of structural frames resembling tree trunks. This building is called the "tree building" by Jen and other participants involved in this projects. The tree building symbolizes the place of control and power from Gods. A Ferris wheel representing the carnival side of the birds' city is mounted on the right side of the stage space. A large crane is installed besides the tree building. It is designed as a performance tool and transportation means of three Gods in Aristophanes' play. Two college students in internship programs in the SBL company assisted the set designer with drawing sketches, developing architectural plans, and building a three-dimensional model of 1: 50 scale.

In the final phase of design process, based on the plans and the three-dimensional model, Jen worked with a computer animator with the charge to reconfigure the birds' city for the digital electronic medium. The computer animator was assigned the job of technical director in this project; hence I call the animator TD in the following analyses. Computer programs enable theater artists to animate the virtual space and manipulate the scene objects in the hypothetical space. After the set designer and TD outputted the 3-D model, a theater director, Keming, was invited to participate in the design meetings. In these meetings, Keming, who played the role of the director, viewed, and scrutinized the computer simulations of the stage space. Based on his professional knowledge, the director often provided professional views on the interpretation of the script and the imaginary staging of actors. The purpose of this chapter was to study technologically informed work practices. Specifically, the data I would analyze were collected in four design meetings involving the set designer, the director, and TD. The meetings lasted

from three hours to four hours. The talk took place in the meeting room in the SBL design studio and participants stood or sat around the computer table viewing the 3-D visualizations shown on the computer screen.

The design meetings were recorded, with the participants' prior written consent, on two video cameras and digitally captured the activities. One camera was positioned from slightly higher above participants and the computer in order to record the overall interaction between the computer and participants. The other camera was positioned to the side of the participants and slightly higher than the computer table so that the tabletop activities can be captured. In addition, I attempted to record all onscreen actions in order to examine any onscreen activity (e.g., an instant pop-up command or a dialogue window) that might occur as data to people's talk and interaction. Traditionally, researchers have relied on analog copying of onscreen images and activities, attempting to map the details of the human conduct in relation to the computer. However, shooting the computer screen with a lens camera often results in poor visual quality. Given our major interests in how specific graphic technologies and the instant features of the computer environment might be brought to bear in the way people act and interact in the workplace, the computer software, Macromedia Captivate, is installed in the computer which automatically recorded all onscreen actions and progressive outputs. This program generates a series of uncompressed frames ready to be recompressed as video streams as AVI files or to be created as an interactive Flash simulation. Utilizing the Macromedia Captivate software, I am able to record all onscreen activities and repeatedly play and watch the recorded data simply using the Windows Media Player Classic program. This digital copying program enables this research to exactly match every screen activity and digital move or act that occurred on the computer interface with the visual and vocal materials recorded by the video cameras.

Pointing in Virtual Scenes

This section begins to address rather different forms of interaction and operation between human and computer. As mentioned, the instances were collected in work settings in which scene design was a leading activity. The analyses particularly concern technological practices in and through which participants use a particular computer software, Maya, in the emergent production and co-ordination of embodied action and work activity. Heath, Knoblauch, and Luff (2000) review a growing body of research in this field. The authors discuss the so called "workplace studies" and consider their implications for research into social interaction and new technology. They discuss how the concern with "the practicalities of technology" in some cases leads to particular interest with talk, visual and material conduct, and the ways in which advanced systems and technological tools, moment by moment, shape the collaborative production of workplace activities. In this study, the following examples demonstrate that the details of interaction lie at the heart of a range of human-computer activities and that discourse, gesture, and interaction are embedded in both the virtual space and Maya's design interface as the material environment of which physically actions and scenographic imaginations are constructed.

Pointing and Locating 3-D Object

In the following excerpt, viewing the 3-D simulation of the scene design, participants form topics of particular dramaturgic interest in the birds' city— the "cloud-cuckoo-land"—in Aristophanes' text. The "cloud-cuckoo-land" exits between earth and heaven as a passage connecting these two realms. The set designer designed a Ferris wheel as a metaphor of the "cloud-cuckoo-land." In the first conversational excerpt, the discussion centers on the design of the Ferris wheel and the visual spectacle

offered by this amusement equipment. At first glance, the characteristics of people's interaction with the graphic, 3-D object on computer desktop consist of a lot of simple pointing gestures toward a scene object on the screen. In our data, the computer graphic program and application allow a scene or a prop to be scaled, rotated, cross-sectioned, visually rendered, or re-graphed at the same time. With a multitasking operating system, the computer allows the participants to engage in several digital tasks going on at once. The participants may perform various operations in a simultaneous fashion. The computer technology has invented ways to support multitasking ways of working in the window. In this highly complicated work context, researchers have found that simple pointing gestures are useful to pinpoint the domain of information available to multiple users. Therefore the pointing gestures are able to incorporate information from this sensory modality (Hindmarsh, Fraser, & Heath, 2001).

The videotaped conversation begins with the director and the set designer both standing in front of a large desk with a computer screen facing them, and to their right, TD sitting on a chair, issuing commands to the computer by way of the keyboard and mouse. The moment begins when the participants are viewing and discussing the visual rendering of the Ferris wheel. To make the Ferris wheel in the scene look real and move realistically, TD is experimenting different speed rates of rotation. In the meantime, facing the computer screen, the director and the set designer are discussing the spectacle of the Ferris wheel as a stage where the chorus can go to and perform in each passenger car (lines 1-2). Then there is a short pause wherein people just stare at the spinning Ferris wheel as TD tries different rates of rotation. In the meantime, a pop-up menu appears on the computer screen and the Ferris wheel stops moving. Responding to this pop-up command, TD moves the mouse cursor over items in the pop-up window. At this moment when the wheel stops moving and in a still image mode, the director’s index finger points

at the wheel's seat close to the ground and says that "this one at the bottom for the leader" (line 4).

[Excerpt: The Ferris Wheel]

01	Director:	歌隊開始唱時可以在摩天輪上
		the chorus can ride upon the Ferris wheel when they singing
02	Designer:	uh 在每一個座位裡
		uh in each passenger car
03		((8.0))
04	Director:	歌隊的leader在底下
		the chorus *leader* at the bottom

Working with the digital media and technology, participants are interacting with a dynamic sound and video environment which is multisensory and fluid. During the eight seconds' pause, the pop-up command, the sound of clicking the mouse, and the transformation of the visualization are the procedural products of the digital medium which constantly impact on people's talk and interaction. When the Ferris wheel stops moving, the director manages to locally navigate through Maya's graphic space and sets the co-participant to the task of seeing a relevant scene object (i.e., the specific passenger car at bottom) in the spatiotemporal digital streams. Then the set designer positively responds to the director by repeating the director's prior utterance (line 5). At this point, the pop-up window has been closed and the mouse cursor is being placed still. These digital acts indicate that the graphic user, TD, is available for the next possible, electronic operation. The salient interface characteristics and the positioning of the mouse cursor constitute communicative resources important for the set designer to request TD to spin the wheel again in the next utterance in line 6.

In the next turn, TD clicks the mouse and moves the cursor, thus displaying orientation to the paired action, that is, to the organization of adjacency pairs of request-response. Then the Ferris wheel spins again at a different rate. There is a long pause for about three minutes in which people carefully monitor the moving picture of the Ferris wheel. In three minutes, the director asks TD to perform a stop operation (line 9). After TD subsequently stops the movement of the Ferris wheel, the director points at one passenger car, giving information about the locale of the chorus' leader verbally and gesturally. He says in line 11 that "the *leader is* still here" (see Figure 5-1). Responsive to what is being said and pointed to, the set designer therefore comments that the Ferris wheel spins "too slow" (line 12).

05	Designer:	好-歌隊leader在底下
		ok-the *leader* at the bottom
06		可以開始轉了嗎
		can the wheel spin now
07	TD:	((operating and clicking on the mouse))
08		((3 minutes))
09	Director:	好停
		ok stop
10	TD:	((operating and clicking on the mouse))
11	Director:	歌隊leader還在這
		the chorus *leader* is still here

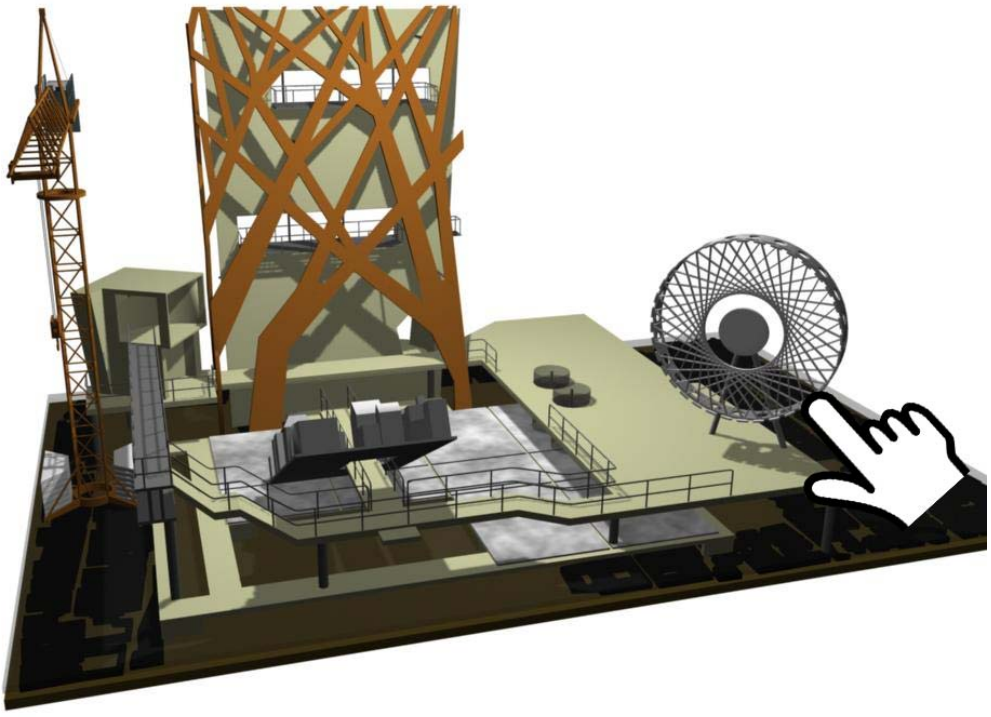

Figure 5-1

12 Designer: 轉得真的太慢了
it really spins too slow

Within this conversational exchange, participants constantly take into account the specific integration of digital data in terms of the audio (e.g., the sound of clicking the mouse) and visual modalities and outputs into the communicative practice in the co-production and management of the mise-en-scène activity: making the Ferris wheel a theatrical device. It is an activity that requires a close collaboration in a continuously updated picture of the design space. In the creation of the visual spectacle; in the storyboard being constructed discursively and imaginatively, the director manages to use the pointing modality to locate the scene object in the virtual space, allowing an embodied access to the scene object within Maya's visual and kinesthetic simulation. On the interactional level, actions on the technological sphere also shape people's talk and

interaction. The accomplishment of the mise-en-scène activity is intertwined with ways in which participants orient to both the 3-D object and the intelligibility of technologies in and through their conduct and interaction.

Note, however, that this study has not addressed the issue of the technological literacy level of the participants. Maya is difficult to use and designing a 3-D world in a 2-D interface is a highly specialized task. The technological literacy varies. TD is a highly specialized, technical user of Maya. As a novice user of Maya, the set designer who is still learning this software possesses some basic knowledge about the system, The set designer however does not know how to perform specific graphics operations (e.g., rotating or rendering a scene object). The director knows nothing about Maya. It is his first time viewing and working with 3-D simulations developed by Maya. Maya is not designed for use by the lay user. Its interface is not easily understood by people with relatively little graphics experience. The section that follows, nonetheless, describes in detailed ways in which Maya's particular interface provides users of different knowledge levels a critical, semiotic resource in the collaboration of building a virtual scene together.

Pointing as "Select" and Navigation

The previous section includes a simple case with which to explore the particular materiality of human embodiment, the pointing gesture, in the management of talk and interaction and the application of producing graphical effect or image on computer. This section examines the computational complexity of the task, the particularities of technology and their import in people's talk and interaction. The following analysis promotes a more thoroughly investigation of the subtlety and materiality of digital technologies in the ordering and organization of mise-en-scène activities. In the first

view, running this application requires a high level of technical literacy of the users. Alt (2002) points out, “Maya continues to develop disparate but highly specialized tools that reflect the demands of its users, such as mathematically rigorous tools for modeling, building, and capturing cinematic animations” (p. 407). On the other hand, Alt points out that Maya is a software that in many ways inscribes what is expected of 3-D modeling within the cultural imagination. According to the author, Maya is a locus of design praxis:

> Maya does not easily lend itself to the immediate expression of the artist’s creativity; rather, the artist must gradually learn to think Maya and move through Maya just as a modern endoscopic surgeon must learn to successfully manipulate and navigate current media technologies in performing each surgery. The resultant graphical effect or image must therefore be considered as a tightly structured process of collaboration between the designer and the application, rather than as an unlimited, freehand expression of the imagination of the artist. In order to successfully use Maya, users must crawl inside, navigate, and inhabit the logic of the application’s complex interactive space. To do so, they must gradually adapt their usual habits of interaction to accommodate Maya’s unconventional interface—a process that effectively reorganizes perception and cognition into a new field of relations. (Alt, 2002, pp. 407-8)

As Alt has said, the medium specificities of Maya require new practices and imaginations of art design. The practices require a number of techniques and collaborations by which artists, set designers, or architects users can successfully construct 3-D visualizations (e.g., models, graphics, or animations). By examining the tight collaboration between the set designer, the director, and TD, the following analysis reveals the process of mise-en-scène communication in which multimodalities, which are sensory information from both

bodily conduct and material, semiotic features of the digital medium, are used to enable participants to make sense through an array of tools and commands in ways that allow them to cooperatively build a 3-D scene in Maya's complex setting.

In the following conversational excerpt, the set designer is explaining the function of the crane in the imaginative, theatrical performance. The conversation between the set designer and the director indicates that the crane would rotate and move to the tree building to load three Gods (lines 1-2). In the next utterance, the director nods his head and expresses his interest in viewing the 3-D simulation of the swinging crane. Prompted by the director's request, TD starts to execute operations by moving the mouse. The director and the set designer also stare at the computer screen while TD performs operations on the screen. First, TD moves the cursor to the directory menu on the top of the screen and then selects "window." Instantly, several command items in "window" immediately show up. TD goes on to select and click "outliner." Then a small view panel listing data objects pops up at the left side of the screen. There is a five-second pause during which the mouse cursor stops moving and TD is seemingly deciding which data object to choose. Then in line 6, the set designer takes a turn, pointing toward one of the data object and uttering, "hoist" (see Figure 5-2).

[Excerpt: The Crane]

01	Designer:	這個懸臂會轉到樹屋這邊
		The crane arm would swing to the tree building
02		來運送三個天神
		to load the three Gods
03	Director:	Mm 我們來看看模擬
		Mm can we see the simulation

04	TD:	((clicking on “window”))
05		((clicking on “outliner”))
06	Designer:	hoist=

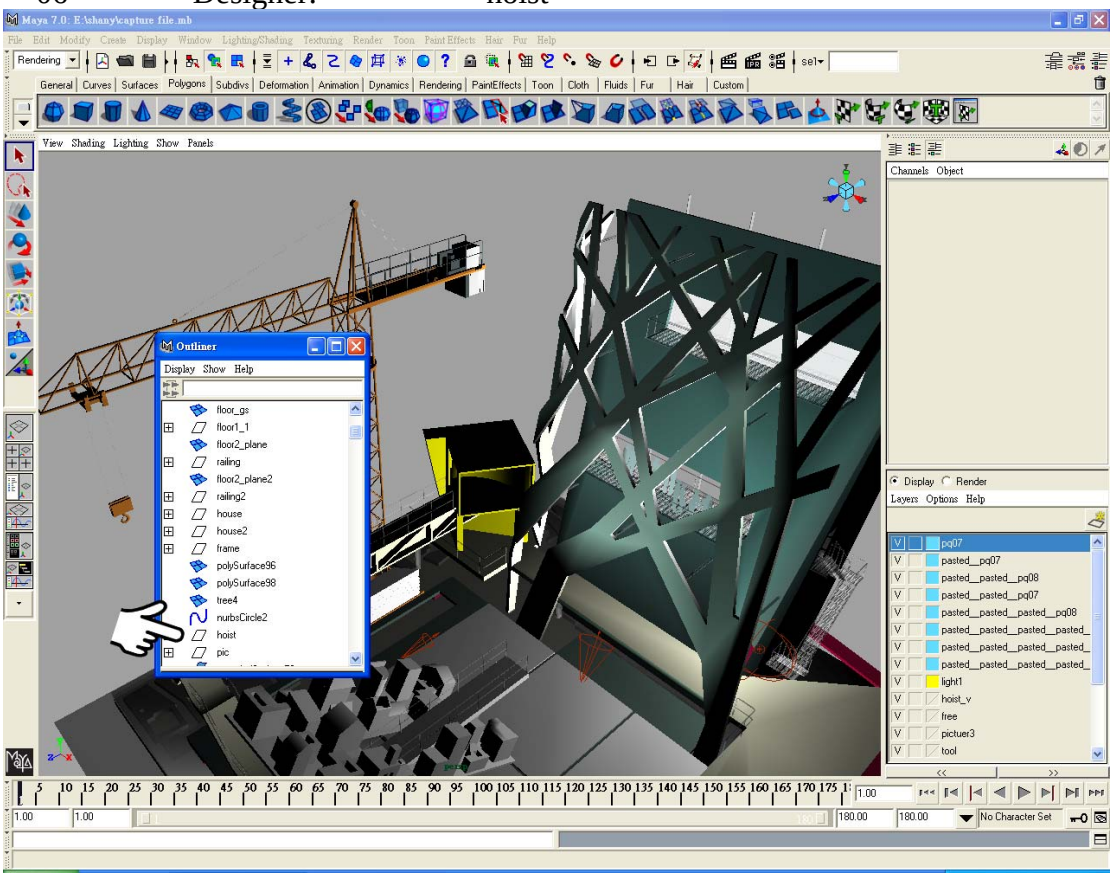

Figure5-2

By the end of the word, “hoist,” precisely at the completion of the set designer’s turn in line 6, TD begins to move the cursor, scrolling down and clicking on “hoist.” Working with TD, the set designer was involved in the preliminary construction of the 3-D model. Also, as the novice user of Maya, the set designer probably knows that the “outliner” window would display all child objects in their file names underneath the parent scene object (i.e., the crane). Here, drawing on the instantaneous screenic text listed as select items on the computer screen, the set designer is able to perform the pointing action to help the co-worker to navigate through an array of items. As we have seen, with the help

of the set designer, TD scrolls down the list, checking off and clicking on the “hoist” in the “outliner” window. After TD clicks on the “hoist,” the arm of the crane is automatically highlighted with green color. Also a semitransparent sphere simultaneously appears on the top area of the crane (see Figure 5-3). What characterizes Maya’s design interface is that Maya builds graphic representations as an expansive “nodal architecture” (Alt, 2002). The semitransparent sphere is the set of points in the virtual, three-dimensional space. In Maya, the semitransparent sphere demonstrates the control vertices of a distinct 3-D object, allowing the user to work with the design object by editing its points or adjusting its three axes. Here, following the appearance of the semitransparent sphere, the set designer subsequently produces an encouraging response, “there we go,” in line 8.

07 TD: =((clicking on “hoist” and a series of operations ensue))

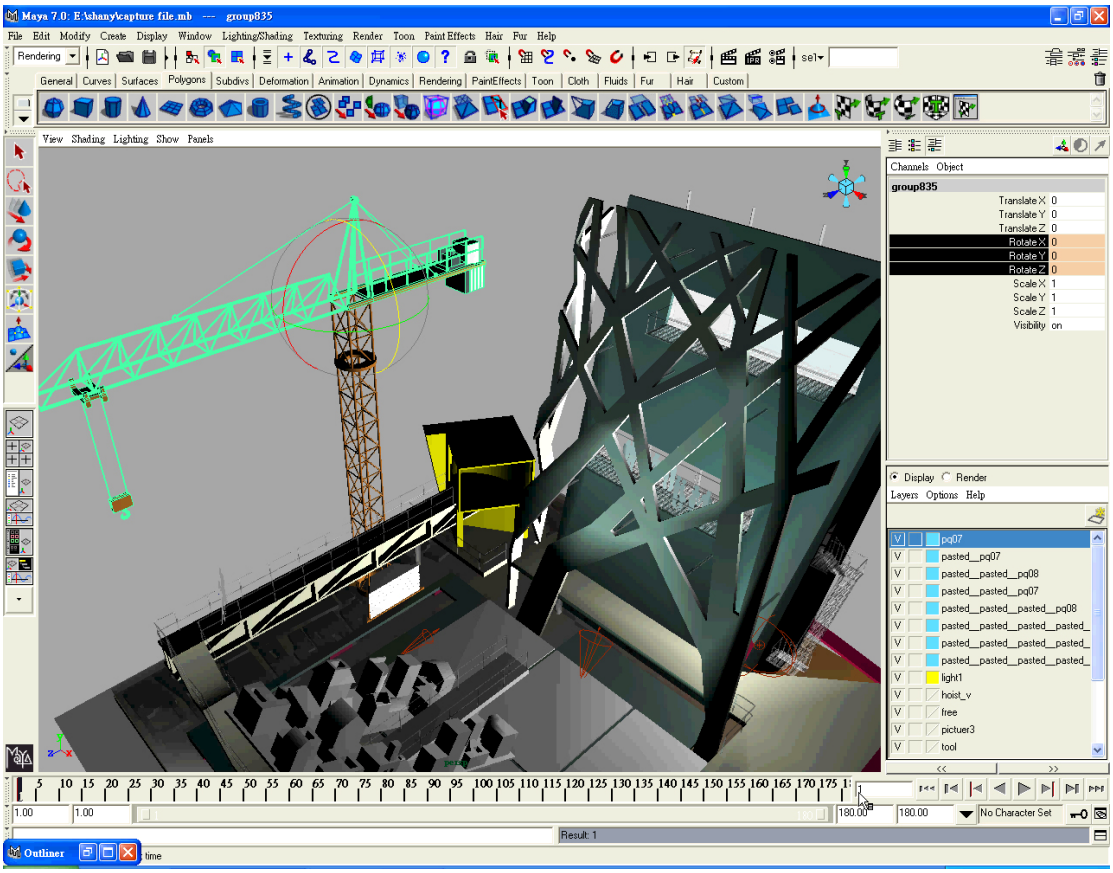

Figure 5-3

08 Designer: 有了

There we go

To understand this interaction depends heavily on knowing the complex ways human, technologies, and the computer environment and space interact; depends on knowing the material, interface features of Maya with which participants continually move through and relate. The set designer's articulation of the data object and his pointing at the "hoist" are accomplished through participants' aligning and maintaining their o-orientation to the complex setting of Maya. Second, the set designer uses Maya's textual environment as a communicative resource in building his talk and action, thereby enabling the co-worker to see and select the item. As a novice user of Maya, the set

designer initiates discursive and embodied actions that are shaped according to the emerging participation in the semiotic environment of the screen at a particular moment as a contextual field of his action. The placement of the point gesture embedded in the transient pop-up menu also performs the "select" function. By pointing on "hoist," the set designer displays TD the place to perform a click. Such "select" is crucial to the accomplishment of the task-at-hand. Manovich (2002) emphasizes the cultural implications of "select:"

> While operations [like selection] are embedded in software, they are not tied to it. They are employed not only within the computer but also in the social world outside it. They are not only ways of working within the computer but also in the social world outside it. They are... general ways of working, ways of thinking, and ways of existing in the computer age. (p.118)

The pointing gesture here encompasses not only hand movements of a speaker's body, but also the primordial constitution of the reality of human cognition and computer operations: selection from a menu. Second, the visual environment of Maya is perceptually resourceful. The digital imaging displays (i.e., the crane in green and the appearance of the semitransparent sphere) and their perceptual salience provide a resource by which the set designer can interpret and configure the design process. The performance of a highly specialized task, namely, the 3-D modeling, is accomplished through complex interactions with the physical, semiotic, and cultural properties that Maya's interface contains. All these digital modalities are coordinate through embodied practices (e.g., speaking, pointing, or clicking mouse button) in the structured surround of Maya; for the novice user, the textual and the visuals constitute an semiotic environment wherein he can begin to unpack the complex setting of Maya, thereby assisting the professional user in the concerted accomplishment of the design task at hand.

After the semi-transparent sphere appears on the top of the crane, to the right of the screen, the “channel box” automatically displays a list of all of the input object’s (i.e., the hoist) keyable features (Murdock, 2004). The keyable attributes are associated with a set of functions including the “translate,” the “rotate,” and the “scale.” According to Murdock (2004), “each attribute has a value associated with it. These values are often numbers…These attribute values can be changed by selecting the channel's value, entering a different value, and pressing the Enter key” (p. 24). TD moves the cursor to the data space of “channel box.” Because the design task is to rotate the hoist, TD presses the mouse button and drags over the columns of “rotate X,” “rotate Y,” and “rotate Z.” Then these three columns are automatically highlighted. The cursor stops moving and is placed slightly below the column of the “rotate Z.” At this point, the set designer takes a turn. His talk is coordinated with nonverbal behaviors that show TD as the primary recipient of his utterance. He turns his head and gazes toward TD, asking him to “rotate Z axis” (line 10). At the same time, the speaker also extends his arm and index finger to form a pointing gesture at the visual icon of XYZ vectors located on the top of the scene graph (see Figure 5-4). Again, drawing on the language of Maya and the textual information that TD is currently selecting and highlighting with the mouse cursor, the set designer builds his question oriented to achieving a mutual comprehension of the emergent axis situation. The pointing gesture is lodged in the iconically structured environment and uses that iconic representation as a constitutive component of the vector action in progress.

09	TD:	((highlighting XYZ columns))
10	Designer:	轉Z軸
		Rotate Z axis

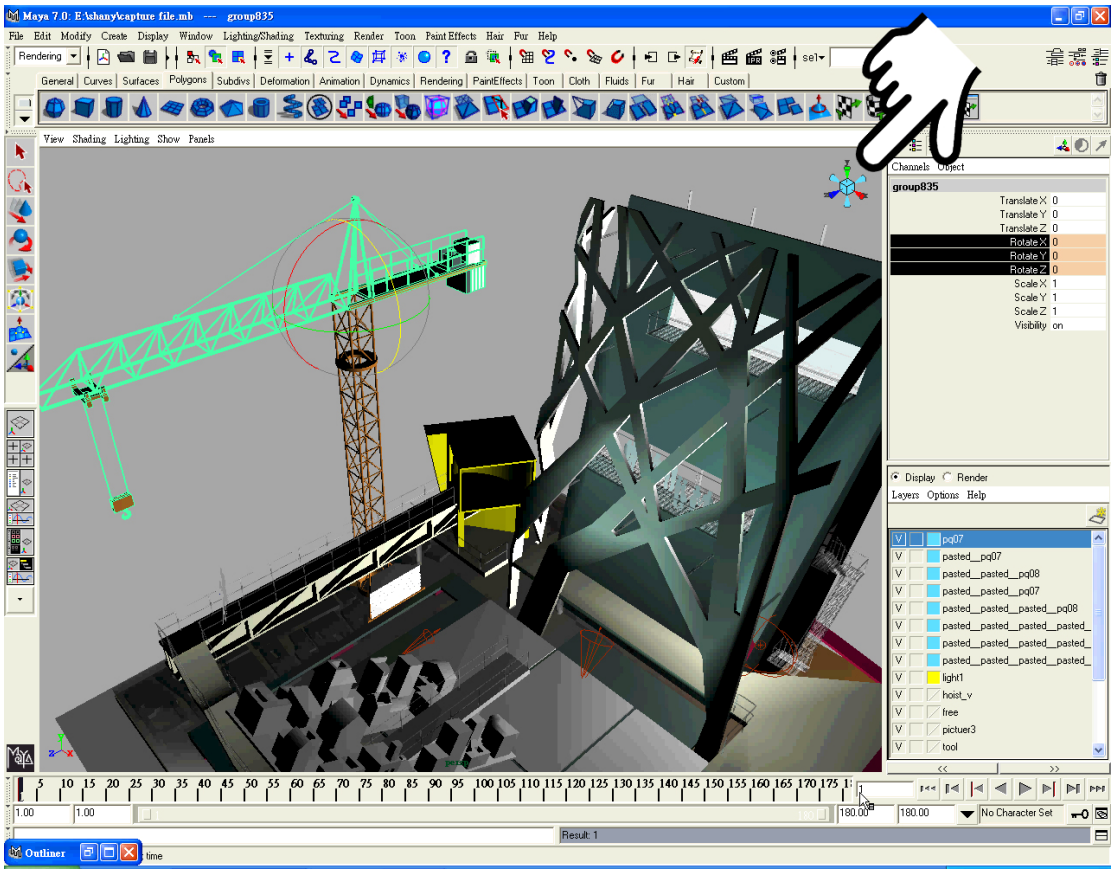

Figure 5-4

Responding to the set designer, TD replies that the rotation should be undertaken on the “Y-axis” (line 11). In the meantime, TD clicks on the command item, “rotate Y,” and a command menu pops up in the next step. The mouse cursor temporarily stays on the second command item, “key selected.” Then looking toward the set designer and the director, TD asks a question, “go to the tree building” (line 13). The final particle, “嗎,” in Chinese frames this utterance as a question. After the set designer’s positive answer in the next turn, TD turns gaze back to the computer screen. TD goes on to inquire the range of the rotation: “approximately how many [degrees “(line 15). Maya requires the user to type in the rotational information of the data object in the three local XYZ attributes at the right-handed set of xyz coordinate axes in the “channel box.” Before keying the

rotational degrees, TD's last word is overlapped by a pop-up message box at the "time and range sliders" in the bottom right of Maya's interface. The time and range sliders are Maya's primary controls for fine-tuning an animation (Murdock, 2004). Specifically, the pop-up message reads in Chinese. The message can be literally translated as "select 1.00 text box."

11	TD:	uh應該是Y軸
		uh should be Y axis
12		((cursor staying on "key select" for about 10 seconds))
13	TD:	to the tree building
14	Designer:	對
		Yes
15	TD:	Mm 大概幾[度
		mm approximately how many [degrees
16		[((text message popping up))

On the computer screen, the current time field shows a 3-D object's current position in time. The user can type a number in this box-like field to change the current time. Here the pop-up message prompts the user to double-click and select the "1.00" box as now shown in the current time field. TD notices this pop-up message as it partially overlaps his utterance. Reacting to the pop-up command, TD moves the mouse cursor from the "rotate Y" column down to the current time field. Then he double-clicks the mouse button to select the "1.00" number. In the meantime, there is an overlap of talk and

performing operations over Maya's interface. While TD operates and selects the "1.00" box in the bottom-right corner, the director pursues the topic of the rotational degrees and gesturally points at the place between the crane and the tree building in the virtual scene (see Figure 5-5). While the director performs this pointing gesture on this specific location, his verbal utterance indicates that "the angle of ninety degrees is here" (line 18).

17 [((TD selects "1.00" box))

18 Director: [九十度在這裡

[the angle of ninety degrees is here

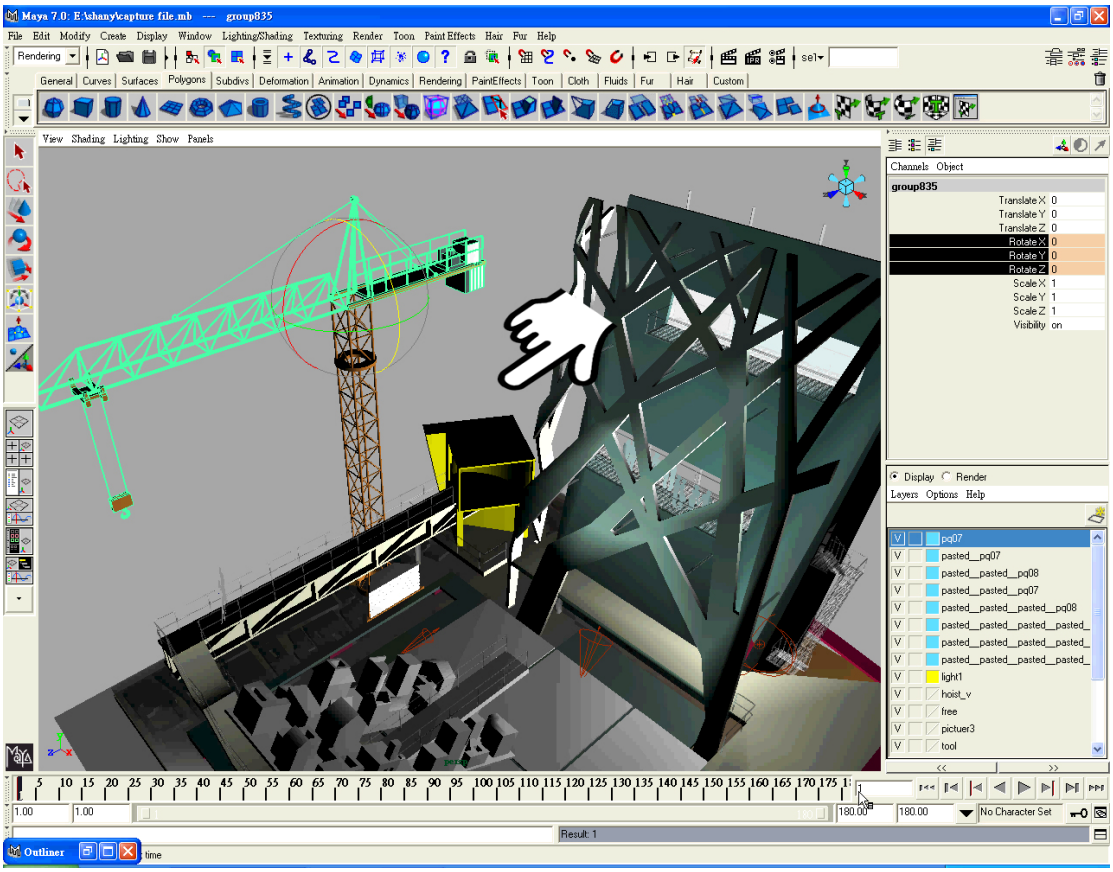

Figure 5-5

The pointing gesture is employed by the director to assess the probable range of rotation. By pointing where the ninety degrees are, the director is able to participate and collaborate in a highly specialized task of rotating and animating the hoist. As mentioned, the director is an illiterate user of Maya. His participation is constructed in part through the sequential organization of talk such that his answer that follows TD's question is a sequentially appropriate action. This sequential resource provides the participant with a place which he can utilize to build the next action. In Maya's interface, scene objects have a directly embodied presence and exist in a material form. Therefore, the 3-D scene provides a visual resource by which the director can easily calculate the position and vectorial movement of the hoist in reference to the other object represented within the same perceivable space. In the next turn, the set designer provides a positive assessment, suggesting that the hoist can "go further" (line 19).

When the set designer and the director are discussing the degrees of rotation, TD is setting up a specific value for the end point in the time slider. TD keys in a value of 180 in the current time box— a procedural process that will allow the hoist to move along the Y axis from frame 1 to frame 180 in time. When TD is setting up the time frame in line 19, the set designer also verbally agrees that the hoist needs to go further. TD moves the mouse point upward and takes the next turn as a continuation of assessing the degree of rotation. In line 20, TD says, "we can try one hundred and twenty degrees first." TD goes on to key in the value of 120 in the command item, "rotate Y." Then TD presses the "enter" button and the crane in the scene starts to rotate and move to the tree building (see Figure 5-6). Seeing the 3-D simulation, the director makes evaluative remarks in the next turn: that's good (line 22).

19 Designer: 所以它要走遠一點

So it needs to go further

20 TD: 我們可以先試一百二十度

We can try one hundred and twenty degrees first

21 ((keying 120 in the “rotate Y” and then the crane rotating))

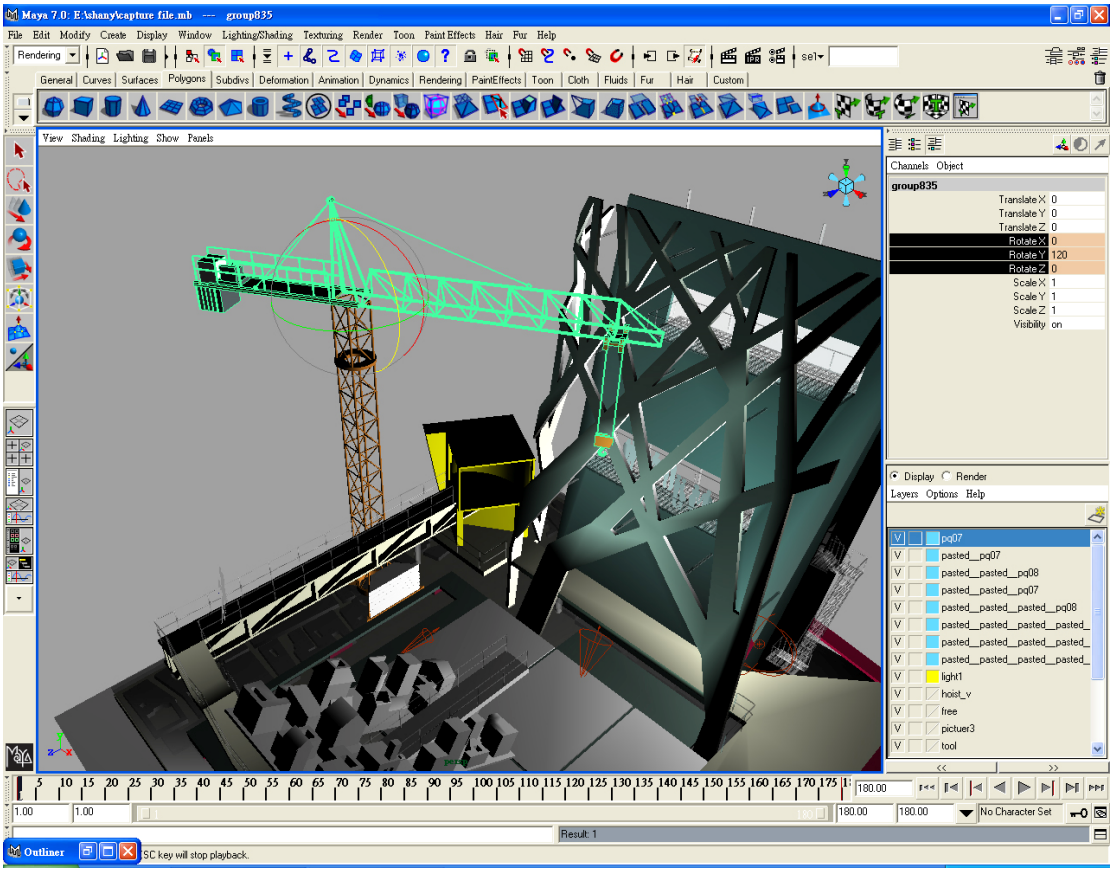

Figure 5-6

22 Director: 不錯

That’s good

A central aspect of the above interactional exchange reveals the integration of Maya’s interface and human communication process as it is constantly fused with texts, numbers, prints, visual icons; with cluster of sign systems that instantiate various sense modalities (e.g., visible, tactile, and kinesthetic) as an embodiment of informatics. A

micro analysis shows how both the novice and illiterate users draw on these semiotic resources of Maya and take part in embodied participation taking place in a highly professional, 3-D modeling practice. The pop-up menu constitutes a spatialtemporal, textual, semiotic field that is relevant to the set designer's co-participation in the design task and in his verbal and nonverbal production of the utterance (i.e., the "hoist" in line 6) as an embodied "select." Second, when the set designer points at the Z axis, the gesture is organized within an iconic system for visualizing complex scientific data. The speaker is able to navigate through the complex data setting by pointing at the iconic representation of XYZ axes.

The placement of gesture constitutes an aspect of expert-novice participation process; it operates through symbols of Maya for instantiating the representation that allows the language and the referent to be tied together in the work of finding a correct vector. Alt (2002) calls for a material focus on the interface design of Maya. As he points out, "As object-oriented digital media applications such as Maya continue to haptically reconfigure our own notions of lived embodiment, we have become increasingly enmeshed in a new ontology of material culture" (p. 420). In our data, what has also emerged from a practical engagement with the visual materiality of Maya's 3-D scene is the director's pointing gesture as it works in the visual scene to approximate the 90-degree rotation. All the pointing gestures that occur here in this section are central to our understanding of how illiterate and novice users and the professional user of Maya work together to complete a specialized task.

Embodied actions emerge progressively according to the very physical and semiotic environment of Maya's interface which provides a visual, communicative resource and insight into ways in which peripheral participation can take place. The notion of participation elaborated by Wenger (1998) engenders the theory of "communities of

practice," such that the development of a common practice defining the community includes the negotiation of meaning among the participating members, their mutual engagement in a joint enterprise, and a shared repertoire of activities, symbols and artifacts. In this section, the communication between the participants of different expertise and the specific materiality of the computer interface of Maya reveals how a productive practice of a theater community, who shares the same design goal is directed to finding solutions to emergent problems (as shown on the screen or in the talk). A micro analysis shows the embodied process is not only central for collaborative work practice, but also supports for a fuller participation. My analyses in this section hence suggest further research to take these two theoretical approaches—Wenger's theory of "communities of practice" and communication theory, into consideration. In this section, we have seen pointing gestures enable participants to locate an object in the virtue scene, to perform an embodied select, and to navigate through Maya's data and graphics space. The next section observes how participants instantiate pointing gestures and interact with the perceptual phenomenon of theater, that is, the staging of imaginative characters in virtual scenes.

Pointing and Staging Characters

As Brokett and Ball (2000) state, "Because the essence of theatre lies in the interaction of performers and audience assembled in the same place, the physical space in which a performance occurs is a crucial element in the theatrical experience" (p. 283). In previous chapters, we have demonstrated that theater people, each from a different perspective and with their specialized knowledge, communicate and build imaginative characters to give a picture of how actors perform on the stage. Working with different kinds of visual representations of stage space (i.e., floor plans, front elevations, and three-

dimensional models), people talk about and create the acting space which is very often embodied in physical forms such as hand gesture, mimicking bodily movement, and the arrangement of miniature figures. The section that follows describes how theater people work together to personify the virtual stage on the computer screen. Although the virtual 3-D model is designed for the design competition, not for stage production in any real theater, participants simulate ways in which actors move through the stage setting and these ideas can embellish the scene design with considerations of physical dimensions of acting. In specific, the following examples show how the set designer, the director, and TD work together to create acting fields in the 3-D model shown on the computer screen. Previous chapters have demonstrated that the establishment of actors' movements from place to place is crucial to the mise-en-scène work. This section puts emphasis on the integration of the creation of stage movement and the use of technology.

Pointing as "Blocking"

In the following excerpt, participants are discussing the dramatic script of *The Birds* by Aristophanes. They are discussing that in one scene, the character, Hoopoe, calls all the chorus birds to vote for truce. When conversing with each other, people stand facing the computer screen and viewing a screenshot showing a static 3-D scene of the birds' city from a default perspective camera. This screenshot offers a bird's-eye view looking down; in other words, this screenshot simulates the terrain elevation model of the theater landscape from above. It is a high oblique aerial image of the birds' city as well as a computer-generated perspective produced by Maya. This is just one possible perspective view onto the Maya's 3-D model.

While viewing the still screenshot of the elevation model, the director initiates the conversation and is concerned with the entrance of the chorus of birds when they are

called by Hoopoe to vote (line 1). When speaking the word, “Hoopoe,” the director points at the computer screen on the main acting stage (see Figure 5-7). According to the design concept of this project, the birds’ city takes the form of the environmental theater where everyday, urban surroundings (e.g., the building, the Ferris wheel, and the crane) become transformed into a theatrical space and any place in this environment can be used as the acting space. Still, participants decide to use the area connecting the tree building and the Ferris wheel as the main acting stage. By pointing at the main acting stage, the director’s hand gesture has indicated, in his ideas about acting, the place where Hoopoe would stand and perform in this particular scene. The director goes on to envision the birds’ entrance from a higher position (line 2). In the next utterance, the director’s index finger points at a hollow space on the tree building on the screen, suggesting that the birds could enter from “the balcony” (line 3). In the next turn, by asking “where,” the set designer shows his uncertainty about the location being referred to. In the next line, The director again points at the same locale on the screen and repeats the same information in his prior turn in line 2.

[Excerpt: Hoopoe]

01	Director:	我想像當Hoopoe叫所有的鳥來投票時
		I imagine when *Hoopoe* calls all the birds together to vote

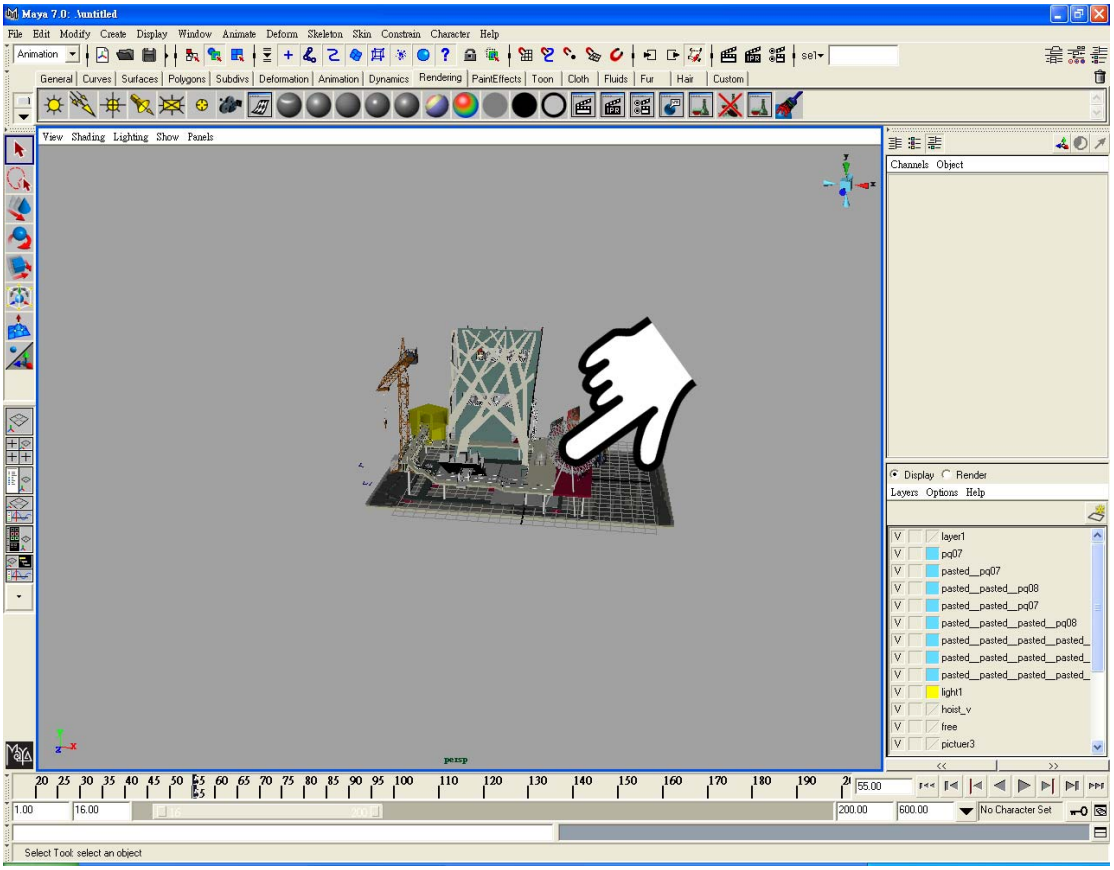

Figure 5-7

02		鳥的chorus應該是是從uh比較高處進來
		the *chorus* of birds would enter uh from a higher position
03		Um 也許從陽台
		Um probably from the balcony
04	Designer:	哪裡
		where
05	Director:	陽台
		the balcony

Every view into a Maya scene is mediated by a camera at an appropriate distance (Alt, 2002, p.416). Because the high oblique angle of the virtual camera shots the 3-D modeling space from a distance. The panoramic image of the virtual theater space appears too small. This small image has caused an interactional problem of locating the "balcony." Therefore, in the next turn, the set designer turns his gaze toward TD and asks him to create a close-up view or a zoom-in operation (line 6). Responding with "ok," TD moves the mouse point toward the tool bar. TD selects the "panels" and then the "perspective." A menu of three selectable items shows up, including the "camera1," "persp," and "new." The cursor point momentarily stays on the "camera1" for eight seconds during which TD just looks at the monitor and is seemingly determining which item to select. Standing behind TD, the set designer sees the series of operations and monitors the screen closely. He takes a turn and uses the semantic resources of the menu items to build his utterance. He says, "camera one" (line 9). Again, the screenic text turns out to be an important resource for the novice user to build participation into a highly specialized task.

06	Designer:	我需要close up (.)或是 zoom in
		I need a *close up* or *zoom in*
07	TD:	Ok
08		((selecting "camera" and the cursor point staying on "camera1" for eight seconds))
09	Designer:	camera one

In the next utterance, TD slightly nods head and double-clicks the "camera1." Immediately, the screen turns black momentarily as if the camera is shifting its shooting angle (see Figure 5-8). The set designer and the director both react to the swift scene change with the same response token (line 11). Here, the presence of a shared response is

embedded in a sequential environment in which the synchronous condition of an analogue output (c.f., a digital output of graphics, number, and print and text) is also demonstrably relevant to the participants in the ongoing talk and interaction. Each new scene in Maya's environment opens up new relationships for thought and action within the realms of material, perceptual practice of outputting a new 3-D space. In about one second, the birds' city appears again on the computer screen. This time the system generates a low oblique perspective view of the 3-D model, which develops a closer vision and shows the side view of the 3-D model. Now the virtual camera is moved to a different position to create a close-up view of the scene. TD then puts the mouse point at the "balcony" being pointed to by the director and places a simple deictic question—"here" (line 12). When delivering this question, TD slightly raises his head and turns his gaze toward the director in search of his response. The director nods his head, producing an agreement token in the subsequent turn of answering (line 13).

10 TD: ((double clicking "camera1" and then a transition window popping up))

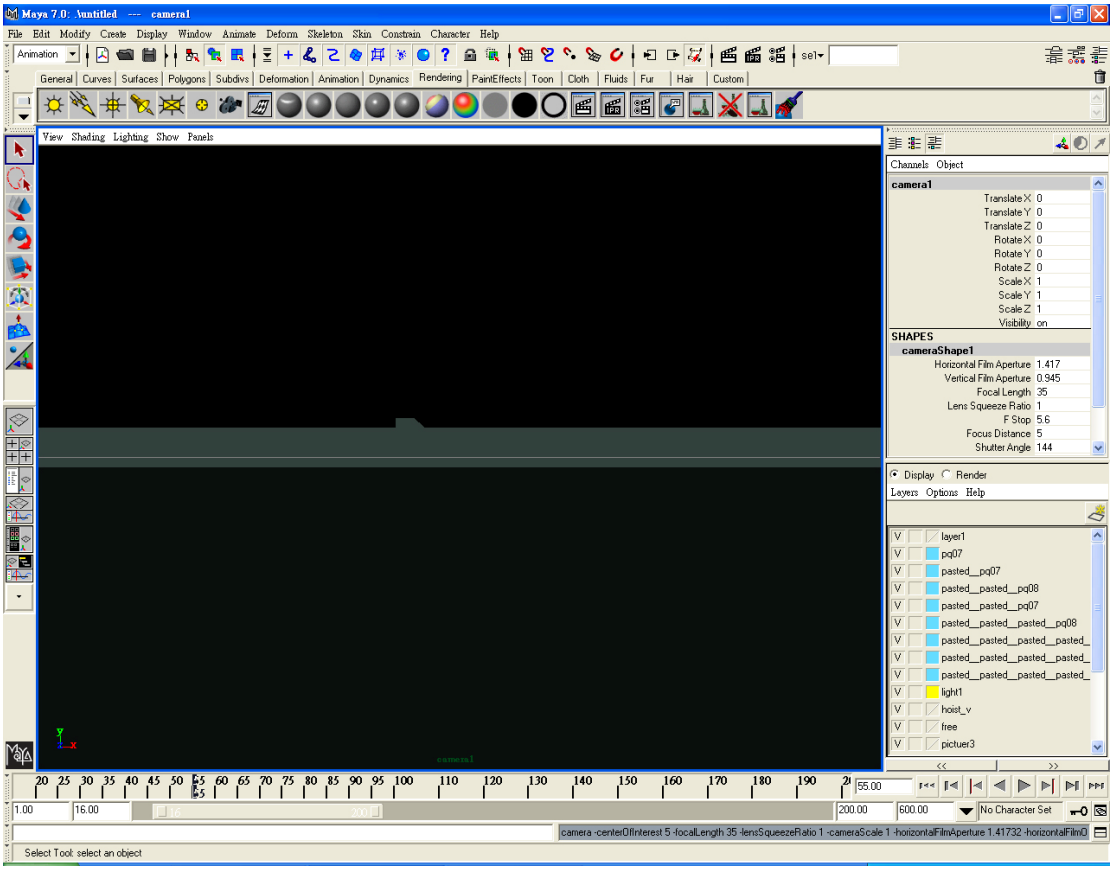

Figure 5-8

11	Designer Director:	and	wow
12	TD:		這裡 ((mouse point)) here
13	Director:		對 right

The interactive work of locating the balcony on the computer screen calls attention to the inescapable role of embodiment in the framing of information, of a place of dramaturgic interest, and in the generation of the camera perspective. Here we shall

notice that the director's hand gesture of pointing and TD's mouse point set a visual parameter for subsequent mechanic operations and adjustments of camera perspective. Alt (2002) argues:

> Keep in mind that so-called "3-D modeling spaces" are almost never experienced in three-dimensional space; rather, they are represented on the 2-D surface of a computer screen. Therefore, it is precisely this ability to relocate one's perspective through the various points within a 2-D object-oriented network of objects that produces the affective experience of navigating a 3-D space. (pp. 416-7)

The 3-D model created with a computer is very different from a physical model of cardboard which is both visually and haptically perceptible. Pointing on the computer screen and in the virtual scene is not simply a physical embodiment. It locally navigates the otherwise multiple and heterogeneous assemblage of camera perspectives and techniques. It enables and guides TD in the procedural process of selecting among various camera perspectives for different views of the 3-D simulation (e.g., view from the top, from down, or from the side).

Therefore, after receiving the affirmative response from the director, TD continues with more keyboard operations of view changes in an attempt to zoom in the balcony along an invisible dolly. Then the tree building and the balcony appear in a closer view. These new perspective views can be accomplished simply by pressing the "alt" key and the mouse button. Now TD holds down the "alt" key, dragging with the mouse button in order to track, tumble, or pan the camera in any direction. In so doing, TD can dolly in or zoom in the object from the particular camera which is currently set up and positioned in a side view. There are several seconds in which TD keeps moving the camera laterally around the 3-D space, creating camera movements as well as dolly shots in the workflow

of generating Maya's cinematic sequence (see Figure 5-9) surrounding the landscape. Then TD adjusts the time slider at the bottom of the computer screen. After setting up a time value, TD again holds down the "alt" key and the camera moves closer to the side of the tree building. The 3-D scene now presents a different level of architectural details including the spatial layout and the design of the stair case, the floors, and the ground.

Inspecting this 3-D scene, the director takes a turn and reformulates acting ideas when a more detailed floor plan of the stage on which the path of the birds can be plotted appears. With verbal and nonverbal indications of attentiveness to the spatial layout of the tree building, the director says, "so the birds standing at the balcony can walk down from the staircase" (line 15). With the new visual representation outputted by TD, the director's spatial dialogue is enriched by his index finger pointing at the balcony while speaking the word, "so." Then the director keeps moving his index finger on the 3-D scene, first moving inside the building and then on the staircase. In the next utterance when the director says, "to Hoopoe," his index finger points at the ground level on the main stage area of performance. The arrowed line in Figure 5-10 represents the virtual path and the imagined movement of the chorus of birds. The pointing gestures inscribed on the screen use the physical environment of the 3-D scene to explore the birds' acting space. The close-up image of the tree building and the overall 3-D environment enable the director to envision how the chorus of birds would perform and enter the main acting area.

14 TD: ((moving the camera closer by pressing ALT key))

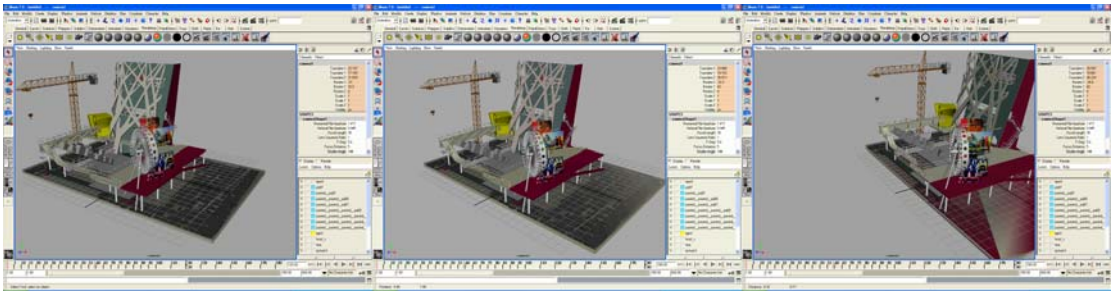

Figure 5-9

15 Director: 所以站在陽台的鳥們可以從樓梯走下來

so the birds standing at the balcony can walk down from the stair case

16 走到Hoopoe

to Hoopoe

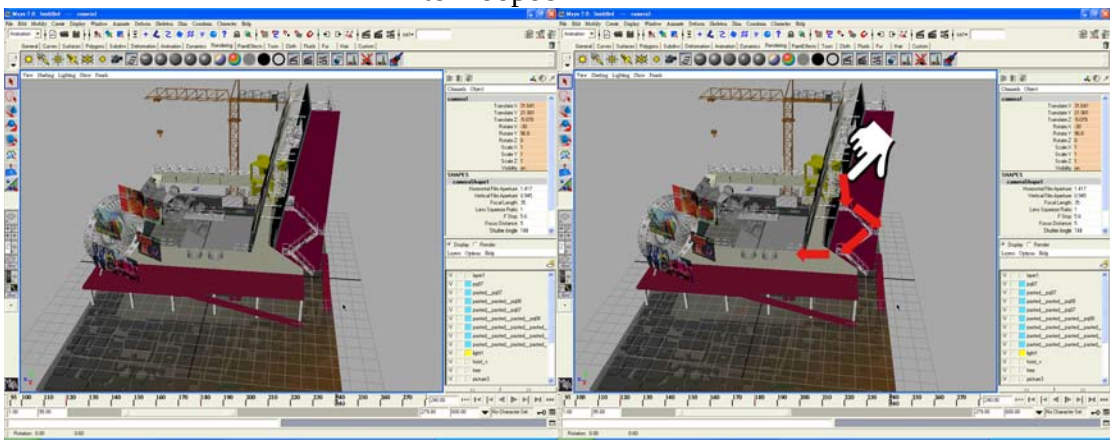

Figure 5-10

In the theater, in order to plan the use of the stage space properly, a director needs to place the movement of actors on an actual or virtual stage moment-by-moment. Brockett (2000) calls this process of placement and movement of the actors from one place to other place on the stage as “blocking.” On a virtual stage, the director in our data employs embodied techniques and expressions that allow the building of virtual “blockings” in the form of gestures to be combined in complex spatial relationships with the architectural

units of the stage space as being represented in the 3-D model, including the tree architecture, the balcony, the staircase, and the ground. The 3-D scene can facilitate an exploration of the various ways actors enter the main stage such that the birds' entrances from a higher position and their movement to the main acting space can now be expressed physically on a 3-D graphical plane, using the entire cinematic apparatus of Maya and its various shooting devices. Moreover, in the mise-en-scène activities, there is always the possibility that the pointing modality works with these material, scenographic devices (e.g., 2-D elevation drawings, three-dimensional models or 3-D models on the computer screen) in the dramaturgic construction of the story's plot. In this instance, pointing gestures have demonstrated how the director who fully understands the dramatic script and the positioning of characters in a certain scene can guide the camera perspective in the technological process and re-constitute the embodied phenomena of fictional characters and theatrical events in a virtual stage space.

Pointing as Animated Walkthrough

In the following pages, I provide an example to illustrate how the computer can continuously modify a 3-D model so that as participants' viewpoint changes, they learn more about the designed space through each still snapshot that Maya's interface generates. In specific, the visualization, through the use of a moving camera angle, which simulates the movement of walking down the staircase of the tree building, provides a richer understanding of actor's relationship with the surrounding stage space. The following excerpt is a continuation of the talk I have examined in the previous section. In the last part of the conversational excerpt I have analyzed, the director's utterances formulate his stage plan for the chorus of birds in the truce scene. In a moment by moment fashion, the 3-D visualization enables the director to envision the space as a

stage and to shape the birds' performance in ways that adopts the specific floor plan and units of the architecture.

Now gazing toward and speaking with the set designer, the director continues to shape more theatrical images through his discourse. The director elaborates further: "I imagine it would be a spectacular scene" (line 1). While speaking, the director creates a metaphoric gesture to dramatize the word, "spectacular." The word is performed with the speaker stretching both arms and making an expansive gesture with his hands to emphasize the imaginative, spectacular feature of the scene. He goes on to describe what makes the scene "spectacular" and says, "especially when ALL the birds come down the staircase" (line 2). The director brings his own insight into the theatrical construction of the scene, informing the interlocutor what is most important in his speech by putting the speech emphasis on the word, "all." In a short pause, the director takes a turn, continuing the imaginative, theatrical composition by describing that the birds would come down "one at a time" (line 4).

[Excerpt: The Birds]

01	Director:	我想像那會是很壯觀的景
		I imagine it would be a spectacular scene
02		尤其所有的鳥從樓梯上走下來
		especially when ALL the birds come down the staircase
03		(3.0)
04		一個一個
		one at a time

In the next turn, the set designer asks a practical question about the numbers of birds that the director will employ in this scene (line 5). The director answers by saying,

“twenty four at least” (line 6). There is a short pause wherein the set designer and the director look at each other, seemingly thinking about the image of the twenty four birds in the virtual stage. In a long pause, the director speaks and attempts to explain more about his staging ideas. In his utterances, the director expresses that as a director he wants to understand actors’ points of view and “feel their way” (line 9). The set designer takes a turn, responding positively to the director by suggesting that they can “take a look inside the building” (line 10).Then TD turns his gaze toward the set designer, partially repeating the set designer’s words and confirming the command by saying, “inside the building” (line 11).

05	Designer:	大概有幾隻鳥uh在你的想像裡
		how many birds are there uh in your imagination
06	Director:	至少二十四個
		twenty four at least
07		(10.0)
08	Director:	事實上
		actually
09		身爲一個導演我想感覺他們怎麼走
		as a director I want to feel their way
10	Designer:	ok(.) 也許我們看一下建築物裡面
		ok (.) maybe we can take a look inside the building
11	TD:	建築物裡面=
		inside the building=

The set designer’s positive answer is immediately forthcoming (line 12). There is a pause of nearly 10 seconds wherein TD is setting up the time frames and creating a differently located camera perspective. Then TD generates a 3-D model which zooms

inside the building and configures the structure of the staircase unit (see Figure 5-11). Now the camera is placed at the view of the pedestrian level—at the height of an actor. TD carries out a series of operations and the camera zooms in on the staircase from all possible angles. The next few turns progress through a sequence of pointing and linguistic receipt of the 3-D modeling space. The director produces his comment which throws light into the human movement in the building. While the director comments the scene by saying, “I see that’s how they walk up the stairs” (line 14), he nods his head, puts his index finger on the first step of the stairs, and gradually moves his index finger up along the stairs (see the arrowed line in Figure 5-12).

12	Designer:	=對的
		=right
13		((generating scene shot 1))

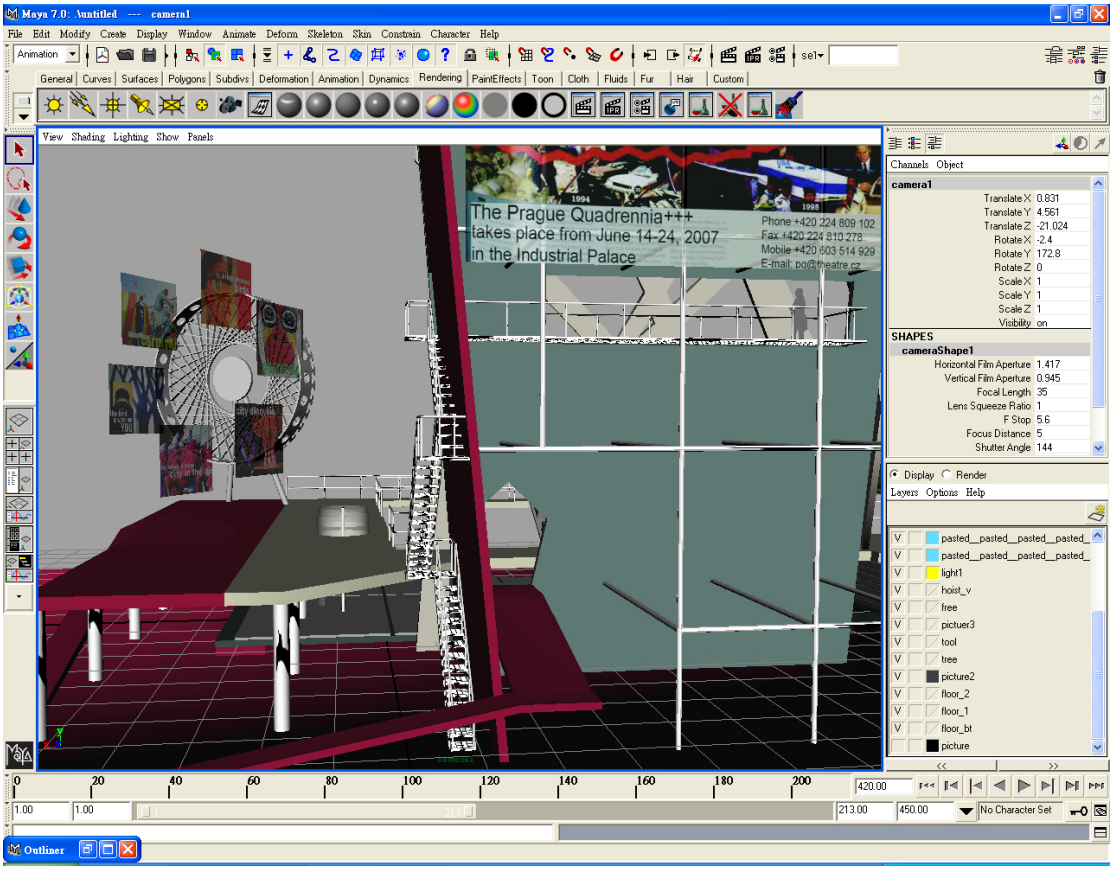

Figure 5-11

14 Director: 我懂了他們是這樣上樓的

I see that’s how they walk up the stairs

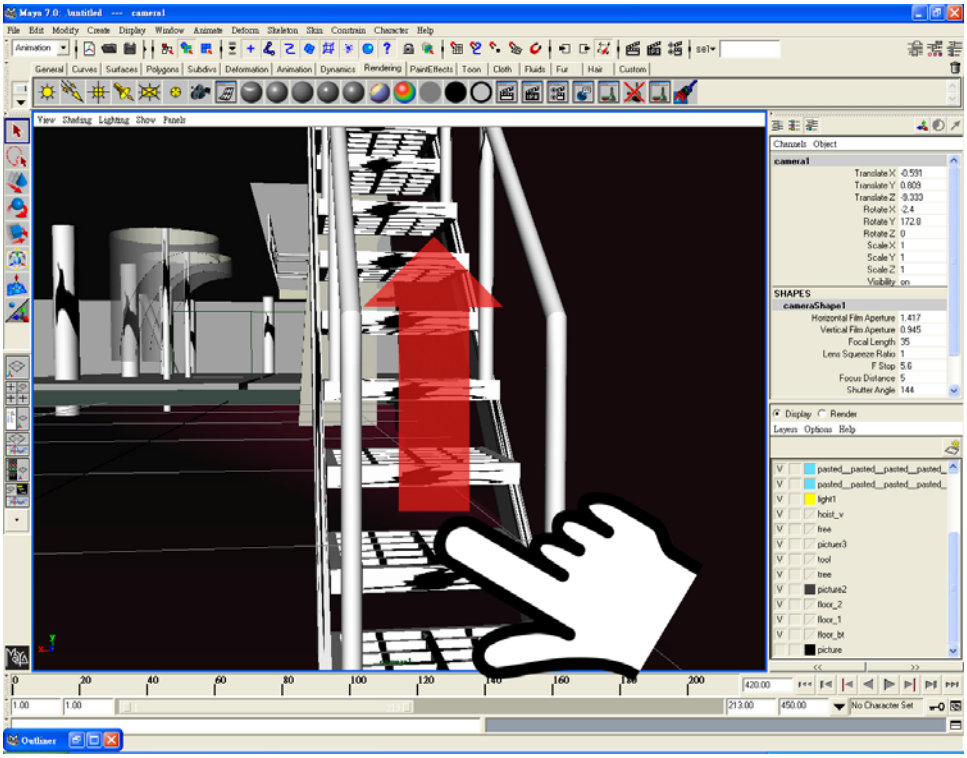

Figure 5-12

15 ((generating scene shot 2))

16 TD: 轉角以及走道

the corner and the corridor

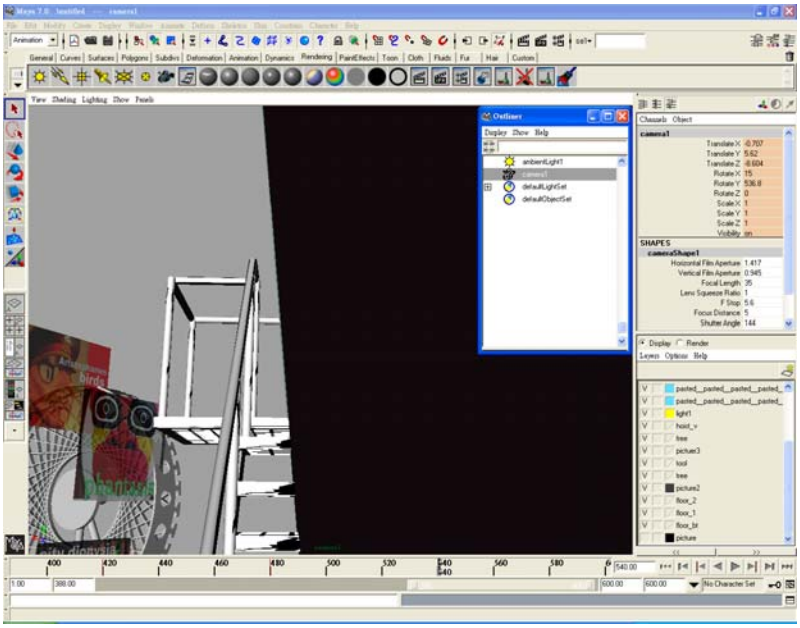

Figure 5-13

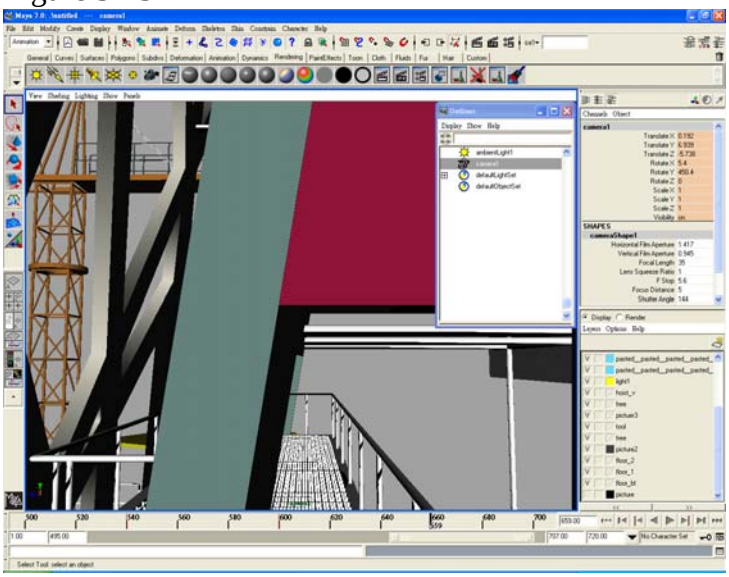

Figure 5-14

17 Director: 現在我知道演員怎麼進出建築物了

now I see how actors get in and out of the building

Through the imaginative, discursive work of directing, the director moves his index finger upwardly along the stairs, embodying a virtual path of continuous walking and

moving through the stairs. The 3-D visualizations obviously help the participants to capture a better part of both the complexity of the designed, physical space and the movements and spatial interactions of the characters in it. As said, the scene can be dollied in or out, hence allowing viewers to experience various embodied positions of people inside the architecture. In the following sequence, TD presses the "alt" key and the right mouse button so that the space can be dollied in. TD creates more 3-D visualizations inside the architectural building. Capturing and processing these graphic images and screenshots, TD verbally indicates that these screenshots represent "the corner and the corridor" (see Figures 5-13 & 5-14). In the next line, the director utters, "now I see how actors get in and out of the building" (line 17). This utterance is accompanied by a pointing and drawing gesture. The director points in front of the computer screen and the index finger draws a curve in the air, metaphorically mimicking the actor's passage and walking path.

In this part of analysis, the director's act of pointing, again, is an embodiment of the virtual space. It is a look as well as an animated walkthrough of the modeling space. The sequential environment of talk is fused and embedded in perspectives generated from both human communication and technology. The pointing gestures belong to a particular turn of talk produced as an assessment of a particular task done by TD. In this part of analysis, we have seen that pointing gesture is an animated walk. It creates bodily inhabitation of the built, virtual space. We have seen how pointing gesture can navigate through the virtual space. The mise-en-scène talk is immersed within a complex web of interactions among the camera perspective, the modeling space and the virtual scene. Alt (2002) describes Maya's camera perspectives:

> There is no single "Default," "Absolute," or "Main" external camera from which the scene can always be holistically "contained" and objectively viewed.

> Rather, a user who wishes to view all the objects in a scene must construct a camera at an appropriate distance and then choose to display the 2-D perspective from that particular camera. Fluctuations of various object states in the scene are inflected by variations within the internal states of the cameras and, by extension, in the internal perceptual states of the user. (p. 398)

By developing different 3D visualizations, TD works in the constant generation and operation of a new camera perspective. With the concrete spatiatilization of the stage setting, the director is able to use the pointing modality as a way of encapsulating the human presence in 3-D space. The mise-en-scène work simultaneously processes various modes of talk and gesture and the outputs of 3-D graphics and animations. With technology, the perspectival construction makes possible the generation of different views of a geometric model. In Maya's design interface, the simulation of different 3-D scenes exerts an influence on people's understanding and experience of the theatrical space. With Maya, the pointing gesture is able to enact an animated walkthrough of the scene—from the stairs, the corner, and to the corridor. Such a perceptual process is embedded in the processural environment fused with Maya's multiple camera perspectives. As the camera moves, the hand gesture moves with the camera in the embodied construction of walking and "feeling their way." Pointing and verbal modalities obviously render the 3-D modeling space an experiential world in relation to human events that take place inside it.

In sum, in this section, the director, the set designer, and TD cooperate with each other because each supplements and extends the work and imagination of the other. In particular, one of the director's jobs is to plan and orchestrate the movement of actors in the theater space. In the first instance, the blocking of the chorus of birds is intermingled with technological affordances. TD helps to dolly in the scene and create new

visualizations, which capture the architectural details of the performing space for an "imagining" and embodiment of the human flux from one acting area to another acting area. In the second instance, by zooming inside the stair case and the architectural building very closely, TD helps the director to feel actors' way of moving in and out of the space. The manipulation of the 3-D space also transforms the director's perceptions about the multistoried building, allowing the director to animate walk through the virtual space on the computer screen. In this way, 3-D spatializations are being supplanted by embodied practices. Such practices are essential for the director's work of visualizing how actors interact with the space in a virtual environment.

Pointing and Scaling in 3-D Environment

Scale is a number. Scaling practice is an embodied activity. In previous chapters, we have seen there is an essential tacit connection between talk and the embodiment of action in situated measuring practices as people construct their notion of scale. When working with a 3-D model in a digital environment, the measuring activity also needs to be turned into something sense-concrete. In 3-D work and interaction, people also interpretatively link that knowledge to body by way of conducting embodied act on the computer screen. Maya's visual interface also constitutes an immediate material environment wherein people can move and construct the scaling act.

Pointing and Counting

In the data that I will investigate, all participants are sitting around the computer table and discussing the scene design concept for this production. They all agree that the architectural configuration of the birds' city represents both fantasy and propaganda control. Because this is an open-space design in an environment theater, there is no central stage of performance. The director proposes to use the elevated area connecting

the tree building and the Ferris wheel as the main acting stage. Prior to the first utterance of the conversation, the set designer positively responds to the director's proposal and describes that this area is an elevated stage and its one side is also bounded by raked seating which can seat the audience. In line 1, the director looks toward the set designer, subsequently asking him a question about the height of the elevated stage.

In line 1, the director asks, "what is the height of uhh mm [this." This utterance is accompanied by a hand gesture which points toward the elevated stage in the 3-D scene. In the middle of his speech, the speaker encounters difficulties in accurately naming the place, therefore displaying troubled fluency in the end of his utterance. The speaker's pointing gesture produced for the recipient establishes a point of visual focus which provides the interlocutor with the communicative resource to observe the location. Looking at the computer screen on the place being pointed to by the director, the set designer produces an overlapped utterance in the end of the director's utterance and in synchrony with the director's word, "this." In his utterance, the set designer collaborates in finding the word for the director and says, "[the elevated stage" (line 2).

[Excerpt: The Elevated Stage]

01	Director:	它的高度大概是uhh mm[這
		what is the height of uhh mm [this
02	Designer:	[架高舞台
		[the elevated stage

After a positive answer from the direction (line 3), the set designer moves closer to the computer and points at bottom area of the computer screen. Because the set designer moves very close to the computer, his index finger touches the screen; his finger touches at a grid overlaid on the base of the 3-D model. While the set designer engages in this embodied conduct, he also articulates the place being pointed to by saying, “in this grid” (line 4).The gird setting the set designer points to and mentions is the base sphere or base plane of a 3-D model in Maya’s design interface (see Figure 5-15). The grid consists of squares of same sizes and dimensions. The grid can optionally be displayed for an elevation model. The value of each unit of the square can be set up in advance. Because Maya tends to prefer scenes to be built fairly small. The grid setting is handy in helping translate or project the size of a graphic object. Here the set designer’s pointing gesture is lodged with this very structured environment of Maya. The embodied action being performed can be understood by focusing on the gesturing hand, talk, and the structured surround of the graphic environment.

In the beginning of his next utterance, the set designer first looks toward the director to check his recipiency. Then he gazes the screen space and goes on to say, “each square is um one meter by one meter” (line 5). The speaker’s index finger still points on the computer screen, but the gesturing hand slightly moves along the shape of the square (see Figure 5-16). The gesturing hand acts upon and establishes what the discourse represents (i.e., the “square”) and its locatable features (i.e., the straight lines being marked through hand gestures) within and through a range of practices— through the body, the physical setting of the grid, and the geometric form of the square lattice. All these modalities are used in concert with the situated activity of instantiating a geometric entity or object for the following measuring activity.

03 Director: 對

right

04 Designer: 在這個grid

in this *grid*

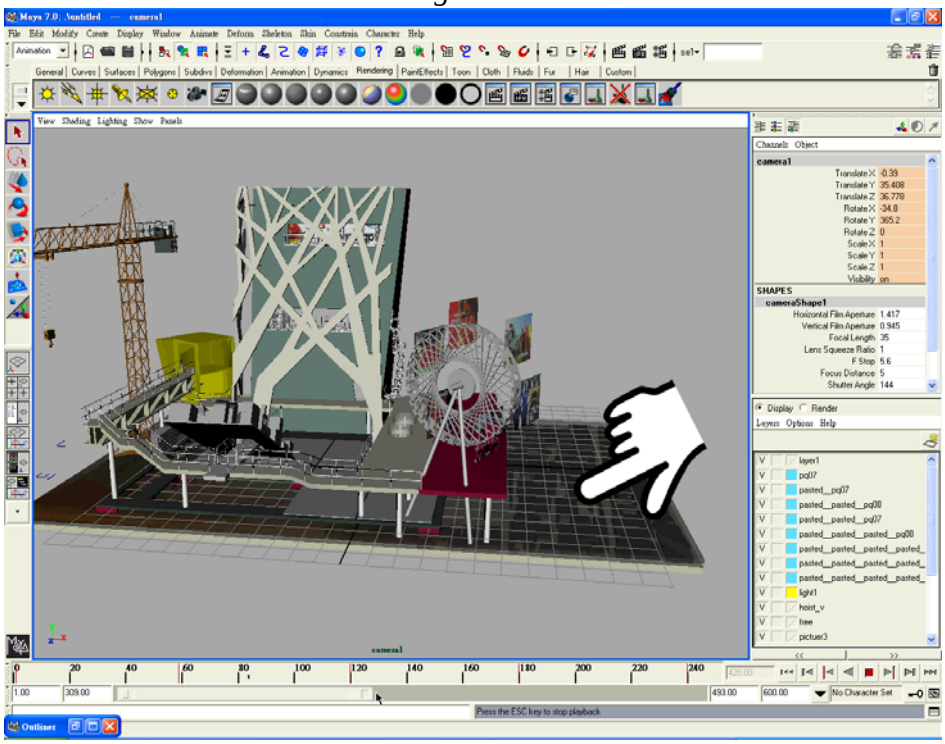

Figure 5-15

05 一個小方格

one small square

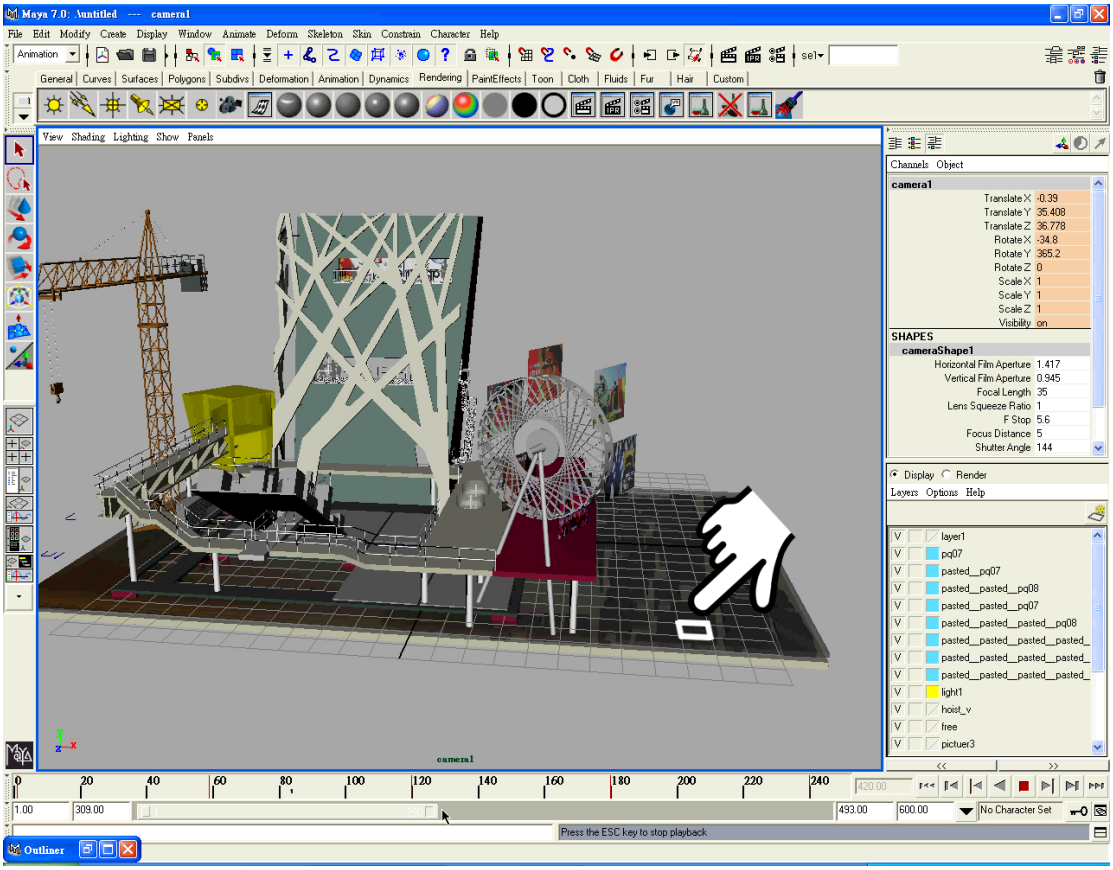

Figure 5-16

In a short pause, the set designer provides a measure of the small square which is “about one meter by one meter” (line 7). Then the set designer turns his head toward TD who now stands right beside him. He asks TD if the measure being given is correct (line 8). At this moment, TD is talking on the cell phone. TD sits facing the computer screen and his right hand still holds the mouse, thereby showing his involvement in the ongoing mise-en-scène activity. TD obviously hears the set designer’s question and explains that “one Maya unit equals one meter in our default setting” (line 9). With this information, the set designer attempts to formulate a measure of the elevated stage in the next utterance. He measures and utters, “so the height is mm [about (line 10). In the following, the act of measuring is pursued and embodied by the director through an overlapped

sequence of pointing and counting on one of the columns or structural supports of the elevated stage (see Figure 5-17). Then the set designer takes a turn wherein he collaborates and formulates a measurement of the height of the column, “four meters,” based on the actions of pointing and counting done in the director’s previous talk.

06		(5.0)
07	Designer	um 大概是一公尺乘一公尺
		um is about one meter by one meter
08		對嗎
		is it right
09	TD:	對一個馬雅單位一公尺在我們設定裡面
		yes one Maya unit equals one meter in our default setting
10	Designer:	所以它的高度mm[大概
		so the height is mm [about
11	Director:	[一二三四
		[one two three four

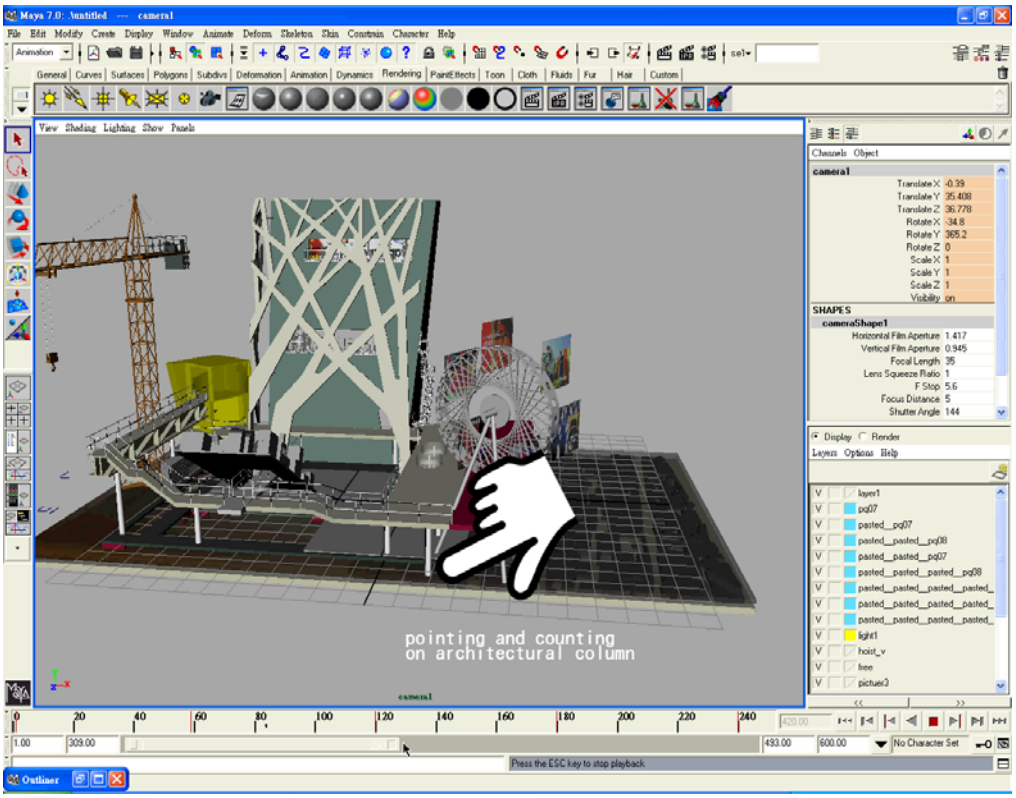

Figure 5-17

12 Designer: 大概四公尺

about four meters

The director's pointing and counting actions generate embodied knowledge. Each point represents one Maya unit based on the dimensioning of the square in the grid setting. The director uses the spatial configuration of this metric element (i.e., one Maya unit size or the square) to take a computational action. Though the height of the elevated stage can be easily checked in the default setting in Maya's tool menus, participants' actions support measurement in the form of embodied, physical interaction. By pointing and calculating the height, the director's gesturing hand and verbal counting constitute the graphics an epistemological field; all these communicative modalities are capable of sustaining knowledge-producing relations in the ongoing work and practice. Goodwin (2003) has described that in talk and interaction in everyday life or in professional

settings the hopscotch on the ground, the color charts, or the mathematic grid all display a "semiotically structured built environment as a constitutive component of the actions in progress" (p. 20). In Maya, the grid, a techno-semiotic system, presents such a consequential, structured environment. In this environment, participants first build a shared understanding of a perceivable, scaling unit and then physically incorporate that knowledge in their cooperative, measuring practice on the screen.

Pointing and Measuring

The following talk also investigates in detail how measuring action can be built and be continuously changed and updated by assembling diverse semiotic and graphic data into reconfigurations of a particular ratio for a given reduced size of 1:50 on the screen. The background to this conversation is that a new 3-D illustration of the Ferris wheel has been opened and created. In order to help the director envision the performing and acting space, TD and the set designer work together to create a 3-D illustration which presents three girls dancing on the main stage. The illustration zooms in one part of the main acting stage near the Ferris wheel and clearly demonstrates the physical relationship between the performing figures and the surrounding space. What follows is part of the conversation that takes place between the director and the set designer. In their talk, they are discussing the size of the figures in relation to the Ferris wheel. In the director's opinion, these three figures are proportionally big when they are positioned in front of the Ferris wheel. So he makes a comment to the illustration: "it appears that the dancing girls are too big" (line 1). What follow are minimal response tokens, "uh::m mm," produced by the set designer who accepts the speaking floor while not producing noticeable next action. Then the director goes on to inquire about "the size of the ground" (line 3). The director turns his gaze back toward the set designer and the conversation continues with

the director who supplements the co-participant more information: “uh I mean in your original model box” (line 3).

[Excerpt: Dancing girls]

01	Director:	看起來這些跳舞的女生太大了點
		it appears that the dancing girls are too big
02	Designer:	uh::m mm
03	Director:	底座是多大 uh 我是說在你原來的模型盒子
		what is the size of the ground uh I mean in your original model box

Note that the director is inquiring about “the size of ground” in the “original model box.” As mentioned earlier, prior to the construction of a 3-D model, the set designer and his assistants also made architectural plans and a three-dimensional, scale model of 1:50. In earlier design meetings, the set designer and the director have viewed and discussed the scale model of the set design for *The Birds.* Based on the director’s opinions, the set designer modified his design concept. Then the set designer and TD worked together. Based on the original floor plans and scale model of 1:50, they built a 3-D simulation of the set design using Maya. All of the 3-D perspective renderings and graphics were still drawn to the same scale as the original so that the exact size of the set, scene elements, and architectural constructions remain the same. In the following conversational sequence, the set designer takes a turn, providing an answer to the director’s question regarding the original specifications. According to the set designer, the size of the “base” is 75 cm in length and 45 cm in width in the original 1:50 scale model (lines 4-5). In a short pause wherein people just stand looking at the screen, the set designer points on the screen and exemplifies, after a phrasal break, a “square module” of which is 100 by 100

cm in size in the architectural plan. It is TD who collaborates in giving the numbers needed to measure the square module (line 9).

04	Designer:	uh 底是七十五公分乘四十五公分
		uh the base is seventy five centimeters in length by forty five centimeters in width
05		在我們一比五十模型
		for our scale model of one to fifty
06		(7.0)
07		例如 (0.8) 這個square module
		for example (0.8) this *square module*
08		在我們的plan是=
		in our *plan* is=
09	TD:	=一百公分乘一百公分
		=one hundred centimeters by one hundred centimeters

The information enables the set designer's *in situ* measurement of the square module on the screen. In line 10, the set designer articulates, "so the length of one hundred centimeters is about this length uh in our 3-D model." This utterance proceeds with a discourse marker, "so," accompanied by a sequence of hand gestures pointing to the square module on the computer display (see Figure 5-18). The set designer's index finger points to the square module, then moving and tracing the shape of the square. Here the set designer has created the square module a common environment wherein a measure or a dimension of one hundred centimeters can be constituted. A second measuring action occurs in the following talk in which the director points at the railings on the main acting stage, then taking a measure by saying, "so here the height of the railings is about fifty centimeters" (line 11).

In the next turn, the set designer agrees with the director's measurement of the height of the railings. During line 13 in the following, the director picks up the height of the railing with his right thumb and index finger tips. Then he moves his gesturing hand and superimposes that length on one of the dancing girl in the 3-D scene (see Figure 5-19). Through this process gestures derive a relative measurement of two objects on the same graphic plane. Here the gesturing hand acts upon the 3-D graphic and changes the gesturer's perception of the ratio of the dancing figures.

10 Designer: 所以一百公分長度大概是這個長度 uh 在我們的3-D模型

so the length of one hundred centimeters is about this length uh in our 3-D model

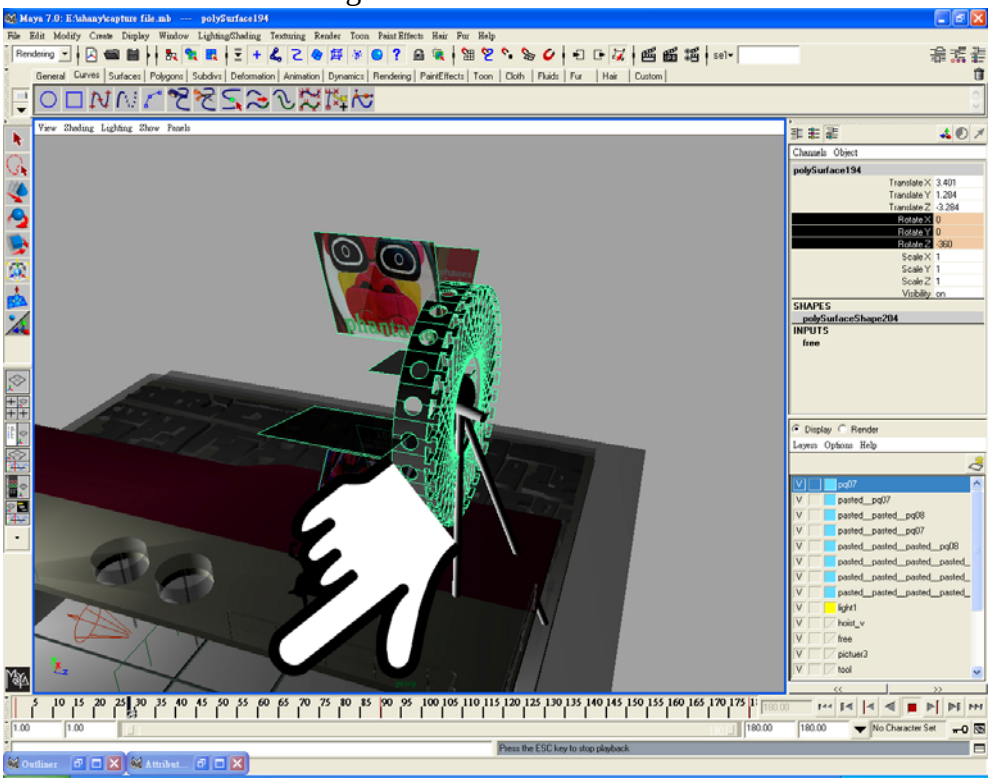

Figure 5-18

11 Director: 所以這邊這個扶手的長度大概是五十公分

so here the height of the railings is about fifty centimeters

12 Designer: 對大約

yes approximately

13 ((pointing and measuring on the screen))

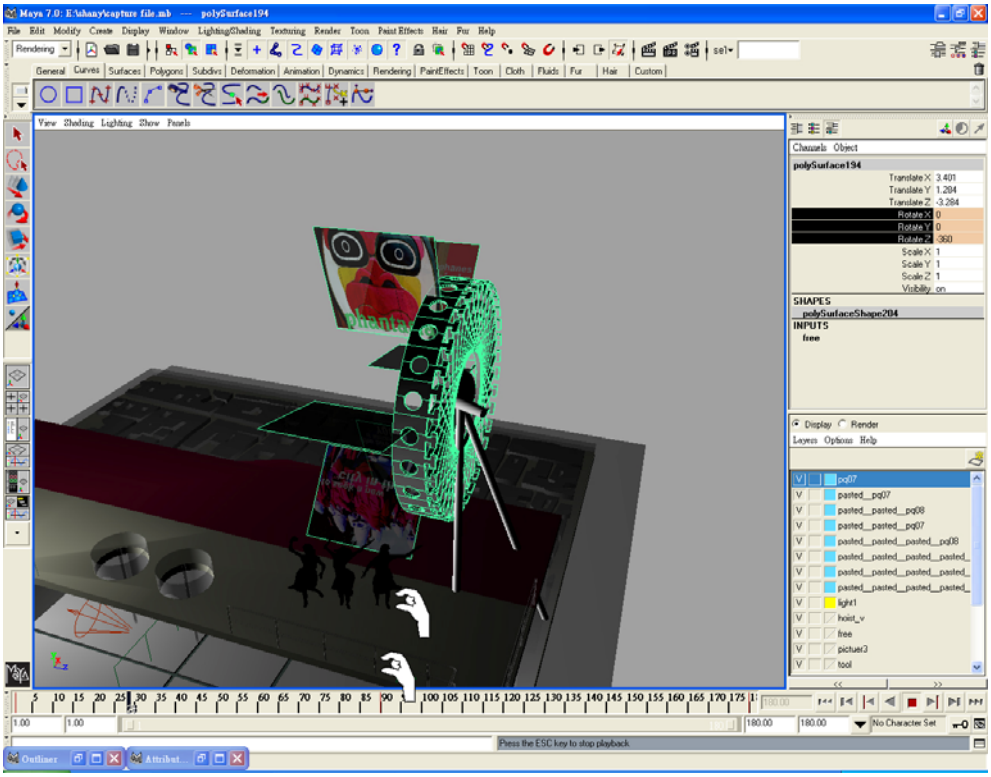

Figure 5-19

14 Director: 對這些女生的比例是ok的

yes the ratio for the girls is *ok*

Here, the sense is made from a multiple and heterogeneous assemblage of perspectives. First, the layout of the 3-D model is based on a 1:50 scale model. We have discussed in the previous chapter that the cardboard model and props in miniature could

be easily accessed, manipulated, and measured with fine precision. Maya's objects, however, do not have a directly embodied presence as material artifacts. Within the perceivable space on the flat screen, measurement is taken and developed through a different perceptual strategy. Among the various 3-D objects such as the Ferris wheel, cylinders passing through the elevated stage, and the module squares located in the ground, the set designer chooses the module square as the primordial site for thought and embodiment. The measuring action is built by marking on the straight length on the model square where a geometric understanding of the measure (i.e., one hundred centimeters) can be achieved unambiguously.

Second, the activity of measuring is set off as the set designer uses the hand gesture to inscribe a line corresponding to one hundred centimeters. Then the director uses the space between his two fingers for instantiating the representations of fifty centimeters in order to take measurements of the railings and of the dancing figures. Both 3-D objects exist on the same plane of perspective level. While bodily conduct provides an access and a tool to scalable phenomena on the flat screen, the graphic, screenic environment (i.e., the module square and the railings) offer visual recourses to build relevant actions and to explore the interpretation of numbers that can be materially embodied. Goodwin (1995) has emphasized the materiality of the computer screen in work practice:

> …the screen is not simply a flat inscription, a place where information is to be apprehended through vision along, but the base of a three-dimensional work area, something that can be touched and manipulated to shape the material it provides into the phenomenal objects required for the tasks of the moment. (p. 258)

Both participants' inscriptions on the screen and on the three scene objects, as instantiations of physical features, reveal that the graphic object on the screen is not just

something to be looked at, but instead a phenomenological and sensuous realm of agency and intersubjectivity where the human body can move and the meaning can be built.

This section demonstrates the embodied practice within which the measurement can be taken and such process is thoroughly interactive. The interaction takes place in Maya's graphic environment (e.g., the grid, the square module, the railings) where a metric measure can be determined and then applied to the measure of other 3-D object. The measurement is made possible through talk and pointing gesture, which is capable of counting or instantiating geometric features of points and lines on the flat, computer screen. It is here that several semiotic systems (e.g., the number system, the grid setting, the module square, and the talk and gesture) co-evolve and the symbols that are used and the meanings they come to have should be seen to be mutually constitutive in actual practice.

Summary of Findings

In this chapter, the analyses point to a complicated picture of the interaction between The computer interface and its users. Several characteristics highlight three important points for understanding mise-en-scène communication:

1. Mise-en-scène communication allows peripheral participation to take place. It is a continuous participatory event until the visualization of design is accomplished.

2. Mise-en-scène communication draws on all the semiotic resources in the environment. Participants' knowledge and artistic considerations could be powerfully evoked and developed. Participants not only draw on signs in culture, like gestures, languages, and texts, but also utilize icons, and symbols of the computer interface to communicate their artistic visions and organize their social interaction with each other.

3. As illustrated in previous chapters, mise-en-scène communication considers the

human interaction with the visual structure, which occurs within a visual workspace. Mse-en-scène communication also contains the technological, perceptual, and visual components of comparable importance.

In addition, this chapter specifically documents how the pointing modality and other communicative modalities become fundamental in three mise-en-scène work practices including the creation of scenes, the staging of virtual characters, and the scaling of 3-D objects. Participants use the 3-D model and the computer to communicate. Pointing modalities become fundamental in the management of talk and interaction between human users and computer technologies. In the first section, what has emerged from a practical engagement with Maya's design interface is pointing gesture, which figures prominently in our understanding of the development of peripheral participation in which lay users of Maya contribute to and collaborate in the professional work of modeling a 3-D scene. Specifically, Maya's complex interface, its textual environment, and its visual graphics provide semiotic and semantic resources for collaborative action and constitution of meaning and participation in the 3-D task of rotating the crane. The second section reveals the process in which participants work together to produce possible perspective views onto the Maya world; each 3-D simulation of a differently located perspective onto the scene enables the director to envision the staging and movement of fictional characters. In this mise-en-scène process, the director uses pointing gesture to explore and to animate the virtual stage space and architecture of the birds' city. The last section demonstrates that diverse sign systems are invoked through the emergent measuring conditions. It is possible for participants to use the pointing gesture to build meaningful counting and measuring actions. The events investigated here do reveal, as mentioned in the very beginning of this chapter, that Maya itself is the "the locus of praxis" (Alt, 2002). As Alt points out, "an analysis of the interface maps the

specific materialities inherent in the application itself and the ways in which these materialities reorganize both perception and practice through a new phenomenology and ontology of production" (p. 390). Moreover, artists synthesize ideas on Maya's interface and use language, gestures, and communication to build scenes and figures and to measure things. I have proposed and explained how Maya's specific material, semantic, and graphic configurations function to extend our understanding of human-computer interaction. More importantly, we gain insight into the materialities inherent in the technology and the cultural embeddedness of dramatic imaginations throughout both the technological and discursive practices of theater making. It is in this conjuncture that we have seen talk, pointing gesture, and different modalities of expression available to human body are coordinated and flourish.

Chapter 6

CONCLUSION

Bateson (1971) states that the plurality of channels exists in human communication. This research shows that in face-to-face interaction in which the participants use verbal and nonverbal channels to construct meaning out of the set of visualization objects. These visualization objects all simultaneously function constituting a human communication system. No channel is privileged. Each channel of human communication comprises an observable embodiment of the ongoing process in which communicators build scenes in their talk or in the imagined, miniature, or animated stage environment. Therefore, mise-en-scène communication is multimodal. It requires close collaboration of theater artists who sculpt space through language, handshapes, and gestures. The emergent talk about scenery is inextricably embedded with the participants' visual, gestural, postural, and tactile conduct. Rather than standing alone as a self-contained analytical sphere, embodiments are constituted and made meaningful through the way in which they are embedded within larger set of practices.

All the embodied phenomena this research examines—the visible bodies, gestures, language uses, and material features in the surround, contribute to three practices within the worklife of a profession, the scene-setting practice, the staging practice, and the measuring practice. In Chapter Three, bodies can perform the imaginary props and establish the relative material features of the stage environment in the embodied action, expanding and incorporating the pictorial dimension of architectural drawings as a site for the simultaneous questioning and metaphorically sculpting on the horizon of the scenographic world. In Chapter Four, bodies manipulate and arrange miniature props in the construction of type of space in which the drama will be staged. In Chapter Five,

hands constantly point in the virtual scene to pick up or select 3-D objects, enabling peripheral participation in the collaborative tasks of modeling 3-D scenery.

Second, being fully embodied, staging practice is inseparable from the visual phenomena that this research attempts to investigate. The development of a figurative sequence of stage directions for the movement of characters involves an imaginative process of composition analogous to that engaged in by the painting artists. In this capacity of elaborating and framing architectural drawings, the dramatists set figures embodied by hand gesture in an imaginary stagescape. Also, the stage space is always bodied forth. Encapsulated by the miniaturized but concrete model space, physical embodiments (i.e., hand gestures and movements and miniature figures) situate the fictional characters within the semantics of acting (i.e., entrances and exits) in the drama. Drawing on the mode of embodiment (i.e., pointing gesture), the interacting body brings its own modes of presencing (i.e., "blocking" and immersion) to the re-perspectiving field of virtual scenes.

Third, measuring practices are characteristically embodied (Lave, 1988). Numerical and linguistic representations of spatial dimensions (e.g., an inch or centimeter) are often scaled in units that are embodied. Through a micro-interactional approach, analyses show bodies as metric systems such that bodily proportions constitute meaningful units of measurement in the act of measuring. Findings of this research also indicate bodies as quantification infrastructure upon which a larger scale (e.g., a meter) is assembled and calculated in the immediate, material surround. In some instances, bodies are also capable of instantiating scalable phenomena. In a virtual environment, doing, talking, counting and enacting initiate and accomplish acts of measuring; again, the body and the linguistic engage the semiotic and graphic surround of Maya, calculably structuring it through hands. All these instances clearly demonstrate how theater practitioners bring together the

body's moving parts and their structural and denotative capacity for scaling and dimensioning such that the human body can iconically suggest something of a visual metric for the local distribution of a measuring concern.

In addition, visual representations provide one material environment as well as a very complicated, perceptual field which shapes embodied interaction systematically performed within their very settings and physical modes of visual production. Visual representations are attended to in and through embodied interaction. The architectural drawings relocate vision to a plane and that the frame is provided by the active constitution and assembly of human embodiment. The box set, the scale model, and the microscale objects invite touch and an encounter between the human body and the dimensions of space. Maya's design interface assumes material agency and forms a sign system. The design interface is physical, allowing both material logic and digital semiosis to emerge for artists who can learn to work within this particular medium. All these representational environments provide a semiotic stage for human action, allowing an interconnection with a perceivable space of scenery.

On the one hand, the materialities of visual representations engage the body on a preinstrumental, prediscursive, and presemiotic level, guiding what participants may build through language and visible bodies. On the other hand, in many instances we have seen, language of spectacle is mise-en-scène—linguistic and semantic structures (e.g., evaluation, questioning, formulation and re-formulation of scenery) can restage a real or imaginary scenery, prop, or actor in the discursive acts of seeing, spectating, and interpreting (drama); in the constitution of theatrical spaces and especially to the symbolic resonances of such spaces to the formation and contestation of two public systems—the textuality and the audience's gaze. In so doing, language builds dramatic imaginations, which draw upon modes of embodiment inseparable from the materialized

conditions of mise-en-scène practice. The visual modes of communication provide a medium for participative and explorable images for visualizing scenes, for staging characters, and for making the story. The visual communication (Kress, 2000; Kress & van Leeuwen, 2001) hence constitutes and sheds light into the process of "imaginative communication." Gatson Bachelard (1964) has above all wanted us to draw attention to the significance of the material imagination. The imagination is rooted in the habitual world of the everyday and its material objects. Using Bachelard's example, imagining someone being round makes us find ourselves entirely "in the roundness of this being" (p. 234). This is because, as Bachelard writes it, "we live in the roundness of life, like a walnut that becomes round in its shell" (p. 234). In this dissertation, participants' scenographic imaginations have the material basis rooted in their structuring of the dramatic world through both pre-structuring visual representations and immediate multimodal acts.

Second, mise-en-scène I claim that mise-en-scène communication is a useful concept for understanding how the artists become engaged in simulated, real-world projects. It provides a way to understand how the participants participate in collectively imagined situations. Mise-en-scène communication is an interpretive frame that describes imagined space, scenes, and characters. Through participation in constructing a virtual or real stage, the speakers come to inhabit this imagined space, scenes, or characters. Participants embody perspectives of these imagined elements. An analysis of how artists engage in design talk can help us appreciate how they build understandings of their activities in and through interpretations of different imagined, dramatic worlds. This concept can also be applied in other simulated projects such as in architecture, in virtual game, or even in politics. Mise-en-scène communication develops a deep appreciation for the various imagined worlds that are invoked in a setting. In what way do participants

imagine scenes that do not yet exist? What kinds of characters populate these imagined spaces or stages? In what kinds of activities do the characters engage the imagined world? Mise-en-scène communication is part of the reality or in Wittgenstein's words, "a form of life." Through extended participation, the participants represent, interpret and evoke their imaginations about scenes, stages, spectacles, and characters. The study of mise-en-scène communication is also a study of how imaginary scenes, characters, literary text, or stories are evoked and transformed in interaction. It calls for a combination of methods including visual analysis, discourse analysis, and interaction analysis that enable communication scholars to study participants' purposeful ways of interpreting, acting, and meaning using various semiotic resources.

In summary, this research demonstrates that features of "mise-en-scène" communication include the following:

(1) Mise-en-scène communication concerns imaginary phenomena in talk-in-interaction.

(2) Mise-en-scène communication is one type of visual communication. The drawings, model boxes, and 3-D animations function as visual contexts of meaning within which embodied activities relevant to the visual images take meaning from them.

(3) Mise-en-scène communication is socially organized such that participants speak to relate to each other's dramatic ideas in different ways; in both discursive sequences and landscapes of actions.

(4) Mise-en-scène communication is not just about visibly embodying and performing the shape or form of things and figures, but also of communicating collective and complex imaginings in talk-and-interaction.

(5) Dramatic imaginations are created and transformed in interactions.

(6) Mise-en-scène communication involves symbolic communication of theater.

(7) Mise-en-scène communication begins with doing something on the architectural drawings, inside the model box, or through actions onscreen.

(8) Mise-en-scène communication allows peripheral participation to take place.

(9) Mise-en-scène communication draws on all the semiotic resources in the environment.

(10) Mise-en-scène communication considers the human interaction with the visual structure, which occurs within a visual workspace. Mse-en-scène communication also contains the technological, perceptual, and visual components of comparable importance.

Overall, while carefully observed in semiotic terms, the human body, the physical objects, and the spatial/temporal features of the surround all exist in properties in relation to the whole semiotic stage of human communication. In this sense, dramatic imaginations are not merely the most prevalent production process, not just the sine qua non of mise-en-scène. Dramatic imaginations cannot be projected through language, bodies or visual representations alone; as a sign of embodied performance, they derive linguistically, materially, and visibly from the extreme semiotic complexity of human activity.

This research also sheds light into the emerging field of multimodalities of human communication. This research emphasizes the set of complex resources in communication, supplying fundamental findings in the everyday work settings and professional practices in the theater-making process. This research also reflects and implicates the growing body of empirical research concerned with new technologies and intelligent interfaces (e.g., Maya) in complex organization of bodily as well as spoken

conduct within the analytical scheme of embodied interaction. In undertaking video-based studies of social interaction, this study has the opportunity of addressing characteristics of action and of settings which have formed a concern for more conventional ethnography. The problem of this study is simply taking the material environment too seriously. This study neglects other potentially relevant, social features such as participants' background and their hierarchical status in the work system. How such characteristics become relevant and reflexively constituted in the multimodal, mise-en-scène communication deserve future research.

Appendix A: Transcript Conventions

The following list of transcription symbols is originally based on the conventions of Gail Jefferson (1974) and this list is adapted from the journal: Research on Language and Social Interaction.

Most Commonly Used Transcription Symbols

hi	italicized words mark linguistic codeswitching
.	(period) Falling intonation
?	(question mark) Rising intonation
,	(comma) Continuing intonation
-	Marks an abrupt cut-off
::	(colon(s)) Prolonging of sound
<u>nev</u>er	(underlining) Stressed syllable or word
WORD	(all caps) Loud speech
°word°	(degree symbols) Quiet speech
>word<	(more than & less than) Quicker speech
<word>	(less than & more than) Slowed speech
hh	(series of h's) Aspiration or laughter
.hh	(h's preceded by dot) Inhalation
[ ]	(brackets) Simultaneous or overlapping speech
=	(equals sign) Contiguous utterances
(2.4)	(number in parentheses) Length of a silence
(.)	(period in parentheses) Micro-pause, 2/10 second or less
( )	(empty parentheses) Non-transcribable segment of talk
(word)	(word or phrase in parentheses)Transcriptionist doubt
((gazing at ceiling))	(double parentheses) Description of non-speech activity

<u>NOTE.</u> This list is cited from Research on Language and Social Interaction: Transcription Guidelines Web site: http://www.erlbaum.com/journals/RLSI/rlsi.htm

Appendix B: Dramatic Synopses

1. The *Dream* was a dance work. Ten dancers moved in a dreamlike sequence on the stage. They wandered on the stage, searching for elusive memories about the city. This poetic and surrealistic theme created the story, which focused on the interaction between the moving dances and the moving images of the city being projected from an overhead projector. The dancers' actions took place in random sequence in random city units and images. The performance featured the Western and Asian dancers blending their styles into extraordinary, new choreography. It was directed by the avant-garde theater director. This dance play was staged in the Experimental Theatre of the National Opera House in Taiwan. The experimental theater is an arena theater with 200 seat capacity.

2. The production of the epic Chinese opera, The *Peony Pavilion*, was staged in the National Opera House in Taiwan. The *Peony Pavilion* was a nineteen-hour opera production. It is a 16th century Chinese opera written by the poet, Tang Xianzu (1550-1616). The opera was directed by an experienced director of the Suzhou Kun Opera Theatre from Mainland China. The *Peony Pavilion* contains 55 scenes and involves six main actors. However, the production brought together over 100 actors, orchestral musicians, artists who worked together and forged a new performance style of "Kunqu" that keeps the art alive and brings it to younger audiences unfamiliar with Kun opera. The tale involves passionate young lovers who only meet in a dream become committed to one another in the face of a conflicting social reality. The two lovers are Bridal Du and Liu Mengmei. Then Bridal Du dies of longing for Liu Mengmei, but she is sent up from the underworld as a spirit in order to marry her destined love. On the stage, the Kun performers showed off elaborate footwork and hand gestures over a nineteen-hour

production. This production was a smash hit in Taipei and many cities around the world. Kun opera is also recognized by UNESCO as a masterpiece of the oral and Intangible heritage of humanity. Kunqu includes singing, stylized gestures, and elaborate choreography. It is performed in a stage language that includes modified Mandarin Chinese along with some aspects of the dialect of the region in which it originated. The language is tonal. It contains specific syllables, has specific pitch values and the number of lines and syllables must conform strictly to the structure of existing melodies. Kunqu performances alternate between arias accompanied by orchestra and the recitation of poems. Kunqu performers are trained in physical movement so that they can sing while in motion. The costumes are also an integral part of the Kun opera. Long sleeves that extend well beyond the hands are called "water sleeves." The actors also wear platform shoes when performing. This art form not only demonstrates the rich and elaborate traditions of music, movement, and voice, but also the serious dedication and training of the artists and actors.

3. The *Birds* by Aristophanes tells the story of two old Athenians, Euelpides and Pisthetærus. They want to escape the city life. Euelpides and Pisthetærus are tired of the law courts, politics, false oracles, and military antics of their fellow citizens. They seek out a place to live in peace and tranquility. To this end, they seek out the Hoopoe, the King of the birds. On meeting the Hoopoe, Euelpides and Pisthetærus discover that there is no place in the known world that can evade the Athenian Empire. The Hoopoe tells of his life with the birds and their life in the sky. Then they hatch an idea. They will build a city of the birds, called the ”cloud-cuckoo-land.” Arrays of birds are called together and these two old enemies, Man and Bird, conspire to demand recognition for their city in the air. As they try to construct their Utopia, the bird kingdom is inundated with unsavory visitors from the Athenian Empire. A group of Athenians tries to impose Athenian ways

upon the bird kingdom. The birds fortify their city. The comedy winds up with the epithalamium in honor of Pisthetærus' wedding.

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